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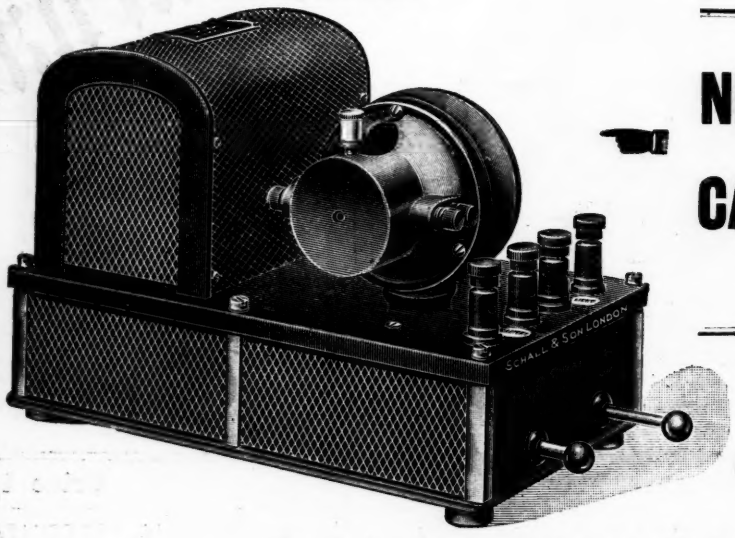

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A Lecture
ON
BRONCHIECTASIS.

DELIVERED AT THE HOSPITAL FOR CONSUMPTION, BROMPTON, NOVEMBER 19TH, 1919.

BY

A. J. JEX-BLAKE, M.A., M.D.OXON., F.R.C.P.,

PHYSICIAN TO ST. GEORGE'S HOSPITAL; ASSISTANT PHYSICIAN, HOSPITAL FOR CONSUMPTION, BROMPTON.

BRONCHIECTASIS, or dilatation of the bronchi, both large and small, is a condition quite commonly met with among the in-patients and the out-patients at this hospital. Except perhaps in a few rare congenital cases, it is not a primary disease of the lungs, but is always secondary to some preceding disorder, such as pulmonary tuberculosis, bronchitis, pneumonia, or bronchial obstruction, and as a rule it is a chronic complaint. I make particular mention of the fact that in bronchiectasis both the large and the small bronchi are dilated, because there is a condition known as bronchiolectasis, or dilatation of the bronchioles, in which only the smaller bronchi are involved, the larger not being dilated. Bronchiolectasis is, generally speaking, an acute condition met with in fatal cases of bronchopneumonia, particularly in children; a good many instances of bronchiolectasis have been recorded in fatal cases of influenzal bronchopneumonia during the epidemics of influenza in this and other countries during the last few years. It is a condition secondary to the bronchopneumonia in which it occurs, and does not alter the clinical picture of the primary disease in any way. It is, however, evidence of the severity of the infection in the bronchioles in which it is seen.

For the purposes of this lecture I have made a study of the clinical notes and *post-mortem* records of over 100 cases of bronchiectasis treated at this hospital and at St. George's Hospital, excluding all instances in which the condition was due to chronic pulmonary tuberculosis. My remarks will be based mainly on the analysis of these records, and I wish to thank my colleagues at those institutions for permission to make use of them.

FREQUENCY.

During the last twenty years some 29,700 patients have been admitted to the Brompton Hospital, 567 of them with the clinical diagnosis bronchiectasis, or 1.9 per cent. But these figures do not by any means give a true picture of the frequency with which it occurs. Bronchiectasis is always secondary to some other pulmonary disease; and in the milder degrees is so overshadowed by the more obvious and important primary disorder as to escape comment. For example, a mild degree of bronchiectasis occurs in practically every case of fibroid phthisis, or chronic pulmonary tuberculosis of the fibrotic type, that comes up for examination in the *post-mortem* room. The physician will no doubt suspect bronchiectasis in such patients while they are in the wards, although he may find it very hard to decide in any given instance whether he has to do with bronchiectatic cavities or the common tuberculous excavation of lung tissue, because the physical signs of the two conditions are similar, and indeed the two conditions often occur together. In such cases the primary disease is so much the more important that the secondary bronchiectasis is apt to be disregarded. In fact, it is probable that, pathologically speaking, some degree of bronchiectasis is present in quite 5 per cent. of the patients admitted to the Brompton Hospital.

Sex and Age.—Bronchiectasis is commoner in men than in women; of the 567 cases mentioned above 332 (or 59 per cent.) were males, 235 females. Among 112 cases examined after death, 90 (or 80 per cent.) were males, 22 females; the ages of these patients were as follows:

Under 10	5	31–40	27
10–20	19	41–60	34
21–30	19	Over 60	8

The youngest patient was twelve months old, the oldest 72 years. In no case was the bronchiectasis thought to have been congenital.

PATHOLOGICAL ANATOMY.

The pathological anatomy of bronchiectasis is well described in the ordinary textbooks; it suffices to say here that there may be either a diffuse more or less uniform cylindrical widening of the tubes or else irregular and saccular dilatation. The distinction is quite unimportant clinically, and as a rule both conditions are present together, with more or less collapse and fibrosis of the intervening lung tissue. Special attention may be drawn to the apparently invariable presence of dense pleural adhesions over any lobes or areas of lung affected with bronchiectasis. In a few instances these adhesions precede the widening of the tubes, and are the chief cause of it, but in the majority of the cases now under consideration they are the result and not the cause of the bronchiectasis, and are due to the outward spread of infection from the bronchi. In all cases the dilated bronchi contain much septic secretion, usually offensive and highly tryptic.

As regards the distribution of bronchiectasis in the lungs, the disease was bilateral in 47 cases and unilateral in 61 out of 108; the right lung was affected in 29 and the left in 32 of the 61. All five lobes of the two lungs were bronchiectatic in 18 of the patients, but there is a tendency for the lower lobes to be more affected than the upper, and in 34 patients with only a single lobe involved the bronchiectasis was in an upper lobe in 8 (right 2, left 6), in a lower lobe in 26 (right 11, left 15). The number of instances in which the different lobes of the lungs were involved in the 108 cases is shown in the following table:

Right upper lobe	50
Right middle lobe	51
Right lower lobe	61
Left upper lobe	49
Left lower lobe	73

Aspiration of the highly septic bronchiectatic sputum into previously uninfected parts of the lung may occur at any time, producing a local aspiration pneumonia or bronchopneumonia. If small in extent, this process may lead to gangrene and excavation of the lung; more or less extensive pulmonary cavities communicating with dilated bronchi were present in five cases. The diagnosis between bronchiectatic and pulmonary cavities is often impossible to the naked eye, though the walls of the latter are usually the more ragged and irregular. Microscopically, however, bronchial unstriped muscle or cartilage will be found in the walls of bronchiectatic cavities. But, if such an aspiration pneumonia is extensive, it is likely to be a terminal event, bringing about the death of the patient by asphyxia or exhaustion before the stage of pulmonary gangrene has been reached or cavities formed. Multiple pulmonary abscesses occurred in three cases.

As would be expected in a chronic septic condition like bronchiectasis, amyloid disease is not rare in it, and was recorded in six out of 103 *post-mortem* examinations. Bronchial calculi were present in the dilated tubes in one case of long standing.

The bronchial secretion in bronchiectasis is copious, purulent, and often possesses strong powers of tryptic digestion. This no doubt explains its highly solvent action on the bronchial walls, which commonly lose their lining of ciliated epithelium and much of the involuntary muscle and the cartilage in their walls in the process of dilating.

Bronchiectasis being always secondary to some other pulmonary disease, the following table shows the primary disorder from which it resulted in 105 fatal cases so far as could be judged from the histories recorded and *post-mortem* examinations:

Prime Cause of Bronchiectasis in 105 Fatal Cases.

Chronic bronchitis	41
Pleurisy or pneumonia	27
Bronchial obstruction by—	
New growth	27
Foreign body	6
Aortic aneurysm	3
Syphilitic stenosis	1

Apart from the fact that all the common cases due to fibrotic pulmonary tuberculosis are excluded from this list, it should be pointed out that these are figures from the *post-mortem* room, and do not represent the relative frequency of the causes of bronchiectasis among the living. Thus, speaking generally, the various forms of bronchial obstruction do not account for anything like one-third of the cases of bronchiectasis met with in the wards; but they lead to a progressive and rapidly fatal type of bronchiectasis, and are associated with other features of great clinical interest, and so occupy a disproportionately large share of the *post-mortem* statistics. The cases in which either pleurisy or pneumonia gave

rise to bronchiectasis have been grouped together, because it is often impossible to ascertain from a patient who had one or other of these diseases many years previously which it was.

With regard to the 27 cases of new growth in the lung compressing or directly obstructing bronchi, it is often impossible to say exactly where such neoplasms originate, owing to the extensive spread of the growth by the time death takes place. The following table can therefore be given only approximately correct:

Nature of New Growths causing Bronchial Obstruction and Bronchiectasis in 27 Fatal Cases.

Primary:	
Mediastinal sarcoma or lymphosarcoma ...	9
Sarcoma of the root of the lung	8
Carcinoma of the bronchus	5
Endothelioma of pulmonary alveolus	1
Direct spread of—	
Oesophageal carcinoma	1
Scapular perithelioma	1
Secondary:	
From carcinoma of the oesophagus	1
From carcinoma of the duodenum	1

The left lung was affected in 15 cases, the right in 10, and both lungs only in the two instances of secondary invasion. The upper lobes showed bronchiectasis in 3, the lower in 10, and both in 12 of the unilateral cases. In only a few of these 27 cases was the bronchiectasis either a prominent clinical feature or well developed from the pathological point of view by the time the patient came to die. The chief signs and symptoms were mostly those of intrathoracic new growth exciting pressure on adjoining structures, or cachexia. In many the presence of bronchiectasis was hardly suspected *ante mortem*.

PATHOGENESIS.

The pathological anatomy of these 105 cases of bronchiectasis having been outlined, it is now possible to consider the pathogenesis of the condition. In all cases two main factors are at work in the production of bronchial dilatation:

I. Softening and disorganization of the bronchial wall by virulent bacterial infection, acute or chronic.
II. Dilatation of the weakened bronchi by—
  (*a*) Pressure from within (retained secretion, frequent cough, with its high intrabronchial air pressure).
  (*b*) Traction from without (forced inspiration, pleural adhesions, pulmonary collapse and fibrosis).

The way in which these various factors work can best be shown by considering pathogenetically different examples of bronchiectasis.

1. In *chronic bronchitis and emphysema* the patient normally lives for many decades without the supervention of bronchiectasis. Should his lungs, however, become infected by some unusually virulent strain of bacteria, a more acute and destructive inflammation of the bronchi sets in. The sputum increases and becomes more purulent and finally offensive, tending to accumulate and stagnate in the more dependent parts of the lungs. Such a patient is likely to get a symmetrical bronchiectasis, at first of the lower lobes only but later throughout the lungs, the inflamed and softened bronchial walls yielding under the combined strains of retention of secretion, repeated prolonged bouts of coughing, and violent inspiratory efforts.

2. In *pleurisy* the *primum movens* of bronchiectasis is the formation of dense pleural adhesions. Thus fixed the lung is unable to expand, and hence cannot be adequately ventilated by respiration, so that the bronchial secretions cannot be coughed up, but tend to accumulate in the tubes and weaken their walls. The adjacent pulmonary alveoli collapse for want of air, and ultimately the affected part of the lung becomes fibrosed by the slow outward spread of infection from the bronchi. The same condition is reached in one step by *slowly resolving pneumonia*. In both cases the newly formed fibrous tissue in the lung contracts, with the result that the softened bronchial tubes are dilated by traction from without. Bronchopneumonia is often bilateral, and so may give rise directly to bilateral bronchiectasis. Pleurisy (with or without effusion) and lobar pneumonia are usually unilateral, and so are likely to give rise to bronchiectasis on one side only. But in such cases the virulently infected bronchiectatic secretion may be spread, by coughing, into the sound lung, with the production of bilateral bronchiectasis later.

3. In *bronchial obstruction* by the pressure of new growths or aneurysms from without, or by the growth of, say, a carcinoma originating in the bronchial wall and obstructing its lumen, the first impulse toward bronchiectasis comes from stagnation of the infected bronchial secretion behind the obstruction. Such secretion is often not sterile; the infection spreads outwards through the corresponding lung tissue, which becomes collapsed for want of proper ventilation, till finally pleurisy and pleural adhesions are set up. The collapsed lung tissue passes into a state of chronic interstitial pneumonia with the formation of fibrous tissue; this inflammatory tissue contracts, and as it does so increases the dilatation of the septic and softened bronchi. It is in this way that the "aneurysmal phthisis" of the older pathological textbooks, or conversion of one or more lobes of a lung (usually the left) into a matted collection of bronchiectatic cavities, takes place when an aortic aneurysm compresses and obstructs a bronchus. In the three such cases tabulated above the bronchiectasis was confined to the left lower lobe in each; the left upper lobe escaping no doubt because the expectoration of its bronchial secretion was aided adequately by gravity.

It must be mentioned that bronchiectasis is not by any means always seen in cases of bronchial obstruction by new growth or aneurysm. If the bronchi distal to the obstruction are sterile they do not become the seat of bronchitis followed by bronchiectasis and chronic pneumonia; instead, the lung merely collapses.

4. In the case of *foreign bodies in the bronchi*, in addition to the resulting bronchial obstruction, which produces the effects described just above, must be considered the fact that the foreign body is invariably charged with bacteria of all sorts, and is, indeed, highly septic. Thus in one of the cases included in the statistics the sputum was fetid on the second day, and the pulmonary infection ran a rapid course, proving fatal in four months. In such instances bronchiectasis, usually a very chronic process, may truly be described as acute in its onset and course.

There is one point in the pathogenesis of bronchiectasis that affords matter for dispute, and that is whether it is the abnormal raising of the intrabronchial air pressure during coughing and forced expiration, or the abnormal lowering of this pressure during violent inspiratory efforts, if either, that most tends to dilate the weakened bronchial tubes in bronchiectasis. This is a hard matter to decide: a question for physicists. Again, how far may the slight but steady outward pull of the elastic tissue in the lungs be considered responsible for bronchiectasis when the two layers of the pleura are united by adhesions?

SYMPTOMS AND SIGNS.

Bronchiectasis, as we have seen, always occurs as a complication of some other disease of the lungs. The patient is already unwell, and in its early stages bronchiectasis will only add to his troubles the spitting up of increased quantities of sputum which is at times, or in parts, offensive in smell and unpleasant in taste. When the bronchiectasis is well established the patient is often cachectic, with irregular fever, sweating, and all the signs of prolonged septic absorption. He has violent bouts of coughing, particularly on change of position, and may bring up as much as 10 oz. of sputum at a single effort. The sputum is highly offensive—its smell is often compared with justice to that of Limburger cheese—and copious, as a rule, particularly in cases where the bronchial dilatation follows on chronic bronchitis, pleurisy, or pneumonia; here it averages perhaps a pint in the twenty-four hours, and reached 71 oz. in one of the patients in this series. Placed in a tall glass such sputum settles into three layers, as is well known to you. The offensive odour of bronchiectatic sputum appears to be due to the setting free of butyric, caproic, and other volatile acids of the paraffin series from the fatty substances in the purulent sputum by the bacteria of putrefaction it commonly contains.

Haemoptysis is of common occurrence in bronchiectasis, and is often copious. As in pulmonary tuberculosis, it may be an early and frequently repeated sign throughout the course of the disease. It was the immediate cause of death in 5 of the 105 patients tabulated above; in one, however, being due to the rupture of an aortic aneurysm into the left bronchus it was compressing. It had occurred in over 90 per cent. of the patients, and may be taken as proof of bronchial ulceration.

Except for its variety and richness, I believe there is nothing characteristic about the bacterial flora in bronchiectatic sputum, unless it be the frequent presence of influenza bacilli. The offensive sputum contains in addition pus cells, crystals of fatty acids, small yellowish masses known as Dittrich's plugs, and in cases where the dilated bronchi have given way with the formation of pulmonary cavities, alveolar elastic tissue also.

The pulmonary physical signs in the early stages are likely to be those of chronic bronchitis in the symmetrical cases; in the unsymmetrical pulmonary tuberculosis is well imitated. When the bronchiectasis is well developed and the sputum copious, the physical signs vary widely with the amount of sputum present in the dilated tubes at the moment of examination. If the tubes are full the vocal fremitus is lessened, resonance on percussion is much diminished, and on auscultation the breath sounds—which are bronchial, tubular, or even amphoric—will be distant and accompanied by comparatively few adventitious sounds. But if the tubes have been emptied by recent cough and expectoration the physical signs will be very different, because the dilated bronchi are now full of air and in free communication with the trachea. The percussion note over the bronchiectatic lung will be more resonant, the vocal fremitus will be increased and much more than the normal, and on auscultation the loud breath sounds and the extraordinary variety of metallic moist sounds suggest the diagnosis of pulmonary consolidation and excavation. Here again pulmonary tuberculosis may be well imitated; I have met with two cases of obstruction of the bronchus to the left upper lobe by new growth, and in each there proved to be extensive bronchiectasis confined to that lobe, but the physical signs were precisely those of tuberculous infiltration and excavation, though tubercle bacilli could not be found in the sputum.

Some degree of clubbing of the finger-tips was recorded in 70 out of 103 of the cases of bronchiectasis, and may well have been present in more. Clubbing of the toes was present in a few of the patients, and clubbing of the end of the nose also was recorded in two instances. In two cases the clubbing of the fingers was associated with Marie's chronic pulmonary hypertrophic osteo-arthropathy.

Complications.

The most interesting of the complications of bronchiectasis is intracranial abscess, 15 instances of which occurred in 108 fatal cases of the disease. The abscesses were cerebral in 9 instances, cerebellar in 3, both in 2, and in one case meningitis and ependymitis were present, but no intracranial abscess was located. The abscess was single in 9 patients, multiple in 6, and in one instance from 20 to 30 abscesses were present throughout the brain. In addition two cases of secondary intracranial new growth were recorded in this series: one patient had a primary new growth at the root of the left lung, with secondary deposits in the pancreas and brain; the other a primary endothelioma of a pulmonary alveolus compressing the left bronchus, with secondary growth in the brain.

Apart from these intracranial complications, the common complications of bronchiectasis are inhalation or aspiration bronchopneumonia, empyema, gangrene and abscess of the lung, and old or recent pulmonary tuberculosis.

Empyema apparently secondary to the bronchiectasis occurred in 17 of the 108 cases, and its occurrence may be regarded as due to the spread of a more than usually virulent bacterial infection from a dilated bronchus to the pleura; in the other 91 patients the organisms reaching the pleura set up no more than an adherent pleurisy. The empyema discharged itself through a dilated bronchus in 4 cases; pyopneumothorax was present in 3, in 2 the empyema was interlobar, in 1 apical, and in 2 was operated on and drained by the surgeon. In 2 other cases that came up for operation pulmonary abscess, not empyema, was found and drained. Extensive gangrene of the lung was noted in 5 instances, multiple small pulmonary abscesses in 3. Old pulmonary tuberculosis independent of the bronchiectasis was present in 5 cases; recent miliary or caseating tuberculosis was seen in 5 also. Acute pleuropericarditis—an unusual complication—was present in the case of a girl of 15, who had a primary periosteal sarcoma of the femur with secondary deposits in both lungs; the left bronchus was completely obstructed, and the left lung converted into a honeycombed mass of bronchiectatic and bronchiolectatic cavities.

Course and Duration.

The course and duration of bronchiectasis are very variable, depending as they do upon the severity of the bacterial infection present in the dilated tubes. This in turn depends upon the pathogenesis of the condition to a large extent, as will be seen on consideration of the following figures:

Duration of Cough in 105 Cases of Bronchiectasis.

Prime Cause of Bronchiectasis.	No. of Cases.	Duration in Months.		
		Average.	Maximum.	Minimum.
Bronchitis	40	110	600	4
Pleurisy and pneumonia	30	39	144	2
New growth...	24	9	24	2
Foreign body	8	23	60	4
Aortic aneurysm	3	15	24	7

These figures can only be offered with the reservation that they are but very approximately correct. It is not possible to say at what moment bronchitis ends and bronchiectasis begins in any series of cases, which is what the above table attempts to do. There is no clinical criterion to mark the onset of bronchial dilatation. Still, the figures in the column showing the average duration of cough in the cases may fairly be taken as indicating that bronchiectasis secondary to bronchitis or to pleurisy or pneumonia is likely to last for several years; whereas the duration of that due to bronchial obstruction is more likely to be a matter of months.

The causes of death common in bronchiectasis are set out below. This table, too, must be offered with reservations. Thus, the term "exhaustion" might from certain points of view be replaced by "chronic septic absorption," with a low or falling terminal temperature.

The Cause of Death in 110 Cases of Bronchiectasis.

Bronchopneumonia	34
Exhaustion	34
Exhaustion and asphyxia	8
Intracranial abscess	15
Intracranial new growth	2
Haemoptysis	5
Heart failure	3
Intercurrent disease	3
Post-operative collapse	3
Septic diarrhoea	1
Lobar pneumonia	1
Influenzal bronchopneumonia	1

The deaths from exhaustion and asphyxia were all in cases of bronchial obstruction. The intercurrent diseases were uraemia, haematemesis from gastric ulcer, and oxalic acid poisoning.

Diagnosis.

The diagnosis of bronchiectasis is easy enough in a typical case of long standing, with its copious offensive sputum, occasional haemoptysis, its fever and wasting, and the signs of excavation and fibrosis at the base of one or both lungs. But in its early stages there may be nothing to distinguish such a bronchiectasis from chronic bronchitis. Again, when the disease occurs at the apex of a lung, the physical signs may be precisely those of the common apical tuberculosis, the only *ante-mortem* distinction being the absence of tubercle bacilli in the case of bronchiectasis; and even then it must be remembered that an acute pulmonary tuberculosis is not rare as a complication of bronchiectasis. And wherever the bronchiectasis is located in the lung, the physical signs may be just those of tuberculous consolidation, fibrosis, and excavation.

The diagnosis may be very difficult in cases of bronchial obstruction by aneurysm or new growth. It must be remembered that in some such patients the lung merely collapses, and the bronchi, probably for want of infection with sufficiently virulent bacteria, do not develop bronchiectasis at all. In others the bronchiectasis may develop, but little or no sputum (and that inoffensive) may be able to make its way past the obstruction. In all these difficult cases good *x*-ray pictures of the lungs are of great help in diagnosis, the thickened and dilated bronchi being distinguishable as opaque strands converging towards the hilus of the lung.

To illustrate the difficulty of diagnosing acute bronchiectasis such as may follow the inhalation of a foreign body,

I have the permission of a colleague to quote the following case, which I saw while it was under his care at another hospital in 1906:

July 12th. A. E. S., aged 21 months, inhaled a pea into the left bronchus; had a very violent bout of coughing, turned black in the face.

July 19th. Admitted to dispensary; diagnosis of pneumonia made; later, dry paracentesis.

July 28th. Sent on to hospital; diagnosis, (?) empyema.

August 5th. History of inhalation of pea picked up from the floor obtained for the first time from the parents. Skiagram shows opacity of left lung, displacement of the heart to the left.

August 6th. Low tracheotomy, exploration of left bronchus, no obstruction or foreign body found.

August 28th. Paracentesis of left chest, half a drachm of blood-stained serum removed. Impaired note, weak breath sounds, occasional râle over the whole of the left lung; (?) pulmonary tuberculosis.

September 19th. Paracentesis, a little pus withdrawn.

September 20th. Operation, piece of sixth left rib removed; half an ounce of pus drained from a ragged cavity, no empyema found. Tube.

October 2nd. Death from wasting and exhaustion; irregular hectic fever since July 19th, occasional bouts of cough ending in vomiting. The left lung was found to be densely adherent, enlarged, airless, and on section composed of a honeycombed series of small bronchiectatic cavities filled with thick inoffensive green pus, with collapsed lung tissue in between. No bronchial obstruction or ulceration found. Corresponding to empyema operation, a small ragged cavity, into which pus could be squeezed from the adjoining lung.

I imagine that the interpretation of this case would be that the child inhaled a dirty and insalivated pea into its left bronchus on July 12th and developed an acute septic bronchitis on the left side, passing rapidly on to bronchiectasis. The pea must have been got rid of before August 6th.

Treatment.

In all cases inversion of the patient, or letting him cough with his head and chest hanging downwards so as to facilitate the emptying of his bronchiectatic cavities, is a serviceable practice, best carried out on waking. For the rest the treatment of bronchiectasis may be either medical or surgical. The *medical treatment* aims at combating the infection in the bronchial tubes by antiseptics, the most widely used of which is creosote. The creosote may be administered in three ways: (1) By the mouth in capsule form; absorbed from the alimentary tract, some of the creosote is excreted into the lungs, and may there act as an antiseptic. I have never seen much good result from this mode of treatment, and it has the disadvantage of tending to upset the stomach. (2) By intratracheal injection; creosote, thymol, menthol, or some other organic antiseptic, dissolved in five or ten parts of olive oil, is injected into the trachea through the curved nozzle of a syringe, below the vocal cords, after cocainization of the pharynx and larynx. A few drachms of the oily antiseptic can be introduced thus daily, in the hope that some of it will gravitate into the dilated tubes and help to sterilize them and their contents. In the few cases in which I have seen it tried this treatment has not proved strikingly successful. (3) By inhalation; up to a point this method gives admirable results, of a palliative order. The creosote, mixed perhaps in equal parts with eucalyptus oil and oleum pini silvestris, may be given on a Burney Yeo inhaler, worn for many hours a day. A more effective method of administration is to have a small closed chamber in which creosote can be volatilized by heat; the patient, his eyes protected from the pungent vapour by goggles, inhales the white clouds of creosote fumes deep into his lungs. The fumes bring on violent coughing which empties the dilated tubes, and no doubt also exert a beneficial antiseptic action on their infected and inflamed walls. A creosote vapour bath can be given daily, at first for five minutes only, but after practice for fifteen or twenty minutes; care should be taken to see that the fumes are not too strong, and that the creosote is not carbonized by overheating the dish from which it is evaporated in the creosote chamber. The benefits to be expected from this treatment are a great reduction in the quantity of the sputum, which often falls from 20 to 30 ounces a day to 2 or 3; loss of its offensive odour; diminution in the patient's fever; and much improvement in his appetite and general condition. But in the great majority of cases it is palliative only, and relapse is likely to follow its discontinuance. It would be interesting to know the result of the treatment of bronchiectasis by the inhalation of a 2 per cent. solution of, say, Dakin's chloramine-T sprayed into the air by a steam atomizer—a treatment that proved successful a few years ago in the sterilization of the nasopharynx of carriers of the meningococcus.

The *surgical treatment* of bronchiectasis consists in the operative removal of many inches each from a large number of ribs over the bronchiectatic lung, in order that it may be made to fall in completely and obliterate the bronchiectatic cavities by fibrosis and collapse. The operation is obviously very severe, and it has been practised on the Continent, and particularly in Scandinavia, much more frequently than in this country, and usually under local—not general—anaesthesia. It is applicable only to unilateral cases of bronchiectasis, preferably those in which the lower lobe of the lung is involved, and to those not due to bronchial obstruction by new growth or aneurysm. I have hitherto had occasion to recommend it in two cases only, in 1917; in one the result was unfortunate, in the other excellent; the patient has been able to return to work for the last six months, and the sputum has been reduced to half an ounce of inoffensive muco-pus brought up on rising. Three successive partial removals of ribs were performed in this instance, and extensive collapse of the affected lung has been effected.

THE EPIDEMIOLOGY OF PHTHISIS.

BY

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I have read with great interest Dr. Brownlee's recent papers on "The epidemiology of phthisis in Great Britain and Ireland,"[1] and, as they bear upon some of my own work on the climatology of phthisis, I should like to say something about them.

Part I.—Phthisis Death Rates at Different Ages.

First of all I would congratulate Dr. Brownlee on having introduced into the investigation of phthisis-prevalence a new method of comparing death rates at successive age periods—a method likely to yield very interesting and valuable information.

Phthisis not a Single Disease.

Dr. Brownlee concludes, from a study of the age curves of male mortalities, that phthisis can no longer be regarded as a single disease, but that two or perhaps three types are to be recognized, "distinguished by the characters of their incidence at different ages"; death most commonly occurring in one type between 20 and 25, in another type between 45 and 50, and perhaps in a third type between 55 and 65.

Obviously this is a proposition which can only be accepted on the most convincing evidence, for the conception of *age selective* types is quite a different thing from the conception of such types as are met with in the diseases to which reference is made in his paper—namely, enteric, bacillary dysentery, tetanus, pneumonia, and cerebro-spinal fever—types which do not select different ages for their attack. Moreover, since we shall find that the male curves differ from the female curves for the same districts, in such a way that the further assumption is needed that his types of phthisis are not merely age selective, but to some extent *sex selective* as well, the difference between them and the types of those other diseases becomes still more pronounced.

Also it must be remembered that neither clinicians nor bacteriologists have any knowledge of the existence of separate types of "human" tubercle bacilli.

Now nothing has impressed itself so strongly on my mind, in the course of my work on phthisis environment, as the conviction that, if the subject is to be raised out of the chaos of mere surmise in which it has always been involved, and if it is to be placed on a solid scientific basis, a principle, which I have called "the principle of the approximate isolation of influences," must be recognized and applied.[2] By such "approximate isolation" I mean the enumeration of all possible appreciable conflicting influences and their successive elimination from the problem so far as that is possible. I need not illustrate the various ways

in which such eliminations can be carried out, as abundant illustrations exist in my publications. That the idea is feasible and effective has been amply demonstrated.

Of the many influences known to affect the prevalence of phthisis, one of the most powerful is the influence of occupation; and occupation is generally far more diverse, and therefore far more disturbing, among males than among females. To eliminate it as far as possible, only female death-rates should be primarily considered. In my work I have been most careful, wherever possible, to deal with female death-rates only, and I have no sort of doubt of the advantage of so doing.

I would suggest therefore considering the corresponding age curves for female phthisis death-rates in the areas which Dr. Brownlee has chosen for his diagrams.

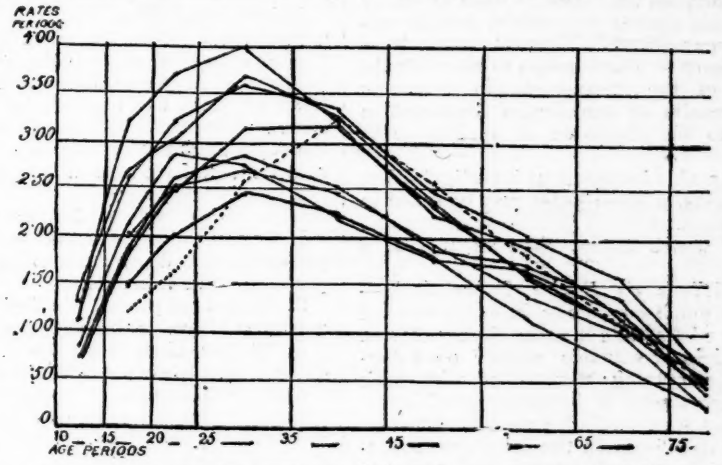

FIG. 1.—Female phthisis death-rates, 1881–90. The curves, in order from above downwards, as they cut the 25 to 35 co-ordinate line, are those of North Wales, Northumberland, South Wales, Lancashire, Devon, Cornwall, Norfolk, London (dotted), Stafford.

Fig. 1 shows the result of comparing the female age curves of all the English areas for the decade 1881–90, and Fig. 2 shows the same for the Scottish areas and Ireland for 1881 to 1900; the latter gives the curves supplied by Dr. Brownlee himself in his Diagrams 14 to 17 and 19, curves in the former have been calculated for the first decade of the same period.

From a study of these curves I do not think one would be justified in deducing the existence of two or three types of "human" tuberculosis. The top of the curve, in nearly every area, lies between the ages of 25 and 35. Only Ireland and Cornwall have curves culminating five years earlier; only London has one culminating between 35 and 45; Lancashire and Midlothian show a level summit from 25 to 45. Surely, if two or three types of phthisis existed, they would manifest themselves in the female curves more plainly than this.

From all the foregoing considerations I cannot but conclude that some conflicting influence or influences have modified the male curves and given rise to mistake. I believe that this is the case, and, from former experience, suspect that the influences of occupation and density of population are the delinquents.

For if we re-examine the male curves given by Dr. Brownlee we find that those which culminate in early adult life—Shetland, Caithness to Argyll, Norfolk, Devon, North Wales, South Wales—belong to areas to which outdoor occupations in open country are predominant, whereas the curves which culminate at middle life—Stafford, Lancashire, London, Midlothian including Edinburgh—belong to areas in which indoor occupations in towns are predominant; also it will be observed in the diagrams of the male curves, in areas where, as time has gone on, industrial life in towns has grown at the expense of outdoor life in the country—Staffordshire, Lancashire, England and Wales generally—the summits of the curves have tended to sweep in successive decades towards higher ages.

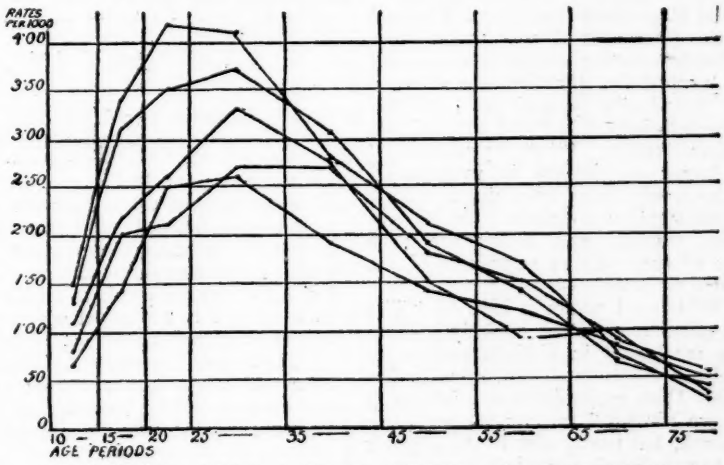

FIG. 2.—Female phthisis death-rates, 1831–1900. (From Dr. Buchanan's Diagrams 14–17 and 19.) The curves, in order from above downwards, as they cut the 25 to 35 co-ordinate line, are those of Ireland, Lanark, etc., Shetland, Midlothian, etc., Caithness, etc.

Therefore I strongly incline to the view that the differences in the male curves are due, not to differences in the organism of phthisis but to differences of occupation and of density of population affecting the predisposition of the male inhabitants to invasion by the disease.

PART II.—DECLINE IN PHTHISIS MORTALITY DUE TO THE INHERENT BIOLOGICAL PROPERTIES OF THE DISEASE.

In the second part of his investigation Dr. Brownlee attributes the undoubted decline in phthisis prevalence in England during the last seventy years (and perhaps before that) not to any change, sanitary or other, in its environment, but to "the ebb of a long epidemic wave" due to "the inherent biological properties of the disease."

I am afraid, on the evidence, which he submits to us with admirable candour, we cannot accept so sweeping a conclusion. It might be as he says, but such figures cannot prove it. He has, however, in Part III, himself demolished the idea. For his evidence was obtained from the Mortality Bills of London, and yet here he has supplied us with a very valuable proof that the decline of phthisis death-rate in London is due chiefly, if not solely, to improved hygiene. "Phthisis," he writes, "has not decreased in London during the epoch for which accurate knowledge is available, except so far as the general improvement in hygiene would explain."[3]

PART III.—STRONG PREVALENT RAINY WINDS AND PHTHISIS.

In one section of Part III Dr. Brownlee has ably re-investigated my work in Devonshire on rain-bearing winds and phthisis, using different periods to mine, and has added to the value of my proof by the manner of his confirmation. I am very grateful to him for doing what for many a day I vainly hoped someone would do—fairly take in hand the proof or disproof of my contention. His courteous reference to my work I cordially appreciate.

His confirmation of this work is clearly of very far-reaching importance; for the influence on phthisis of strong prevalent rain-bearing winds is a very powerful influence and needless to say, if it is admitted to be exercised in Devonshire, it must be also admitted to be exercised elsewhere, wherever those winds are met with. So important do I consider this influence, and so lamentable the results, scientific and practical, which have flowed from ignorance of it, that I make no apology for very briefly summarizing here the mass of evidence now accumulated on the matter.

1. *Evidence from Many Parts of the World.*[4]—All over the world, wherever sufficiently reliable information was available, I collected data for examining into the relations of wind and phthisis. This work was done less in search

of confirmation than in *seeking for exceptions* whose existence would point to some fallacy in my proof. No such exceptions were found, but much valuable and interesting confirmation was forthcoming.

2. *Effect of these Winds on Phthisis Patients.*[5]—Cases of phthisis in Devonshire exposed to these winds have been shown to run a shorter course than cases sheltered from them. Unpublished clinical evidence also has accumulated pointing strongly in the same direction. I have also tried to compare the statistics from variously placed sanatoriums; this proved impossible, but it was significant that some exceptionally exposed sanatoriums kept no records of results! There seems to me no doubt that some at least of the disappointment generally expressed with the results of sanatorium treatment in this country is due to the ill-chosen sites of some of our sanatoriums.

Perhaps now that an able independent investigator has confirmed my conclusions, a little pains may be taken to place the new sanatoriums for our phthisical sailors and soldiers in situations where failure shall be less of a foregone conclusion!

3. *Effect of these Winds on Bovine Tuberculosis.*—Bovine tuberculosis is much commoner in areas exposed to strong rain-bearing winds than in areas sheltered from them.[6] Professor Delépine's valuable paper [7] on tuberculosis in the farms supplying Manchester with milk gave me a unique opportunity of investigating this important point. This fact surely calls for some attention.

4. *Altitude and Phthisis.*[8]—When the influence of rain-bearing winds had been taken into account and, as far as possible, eliminated by considering only localities sheltered from them, the contradictions, which had rendered a satisfactory conclusion on the relations of altitude and phthisis prevalence impossible, disappeared, and the important generalization was reached that altitude, *per se*, has no influence on phthisis prevalence. The fact is that, as altitude increases, exposed situations increase so much in bleakness that the population is more and more forced into shelter; consequently, as altitude increases the proportion of the population living in shelter increases and the prevalence of phthisis falls. This conclusion does not affect my belief in the beneficial effect of high altitudes in shelter on phthisis patients.

5. *Subsoil and Phthisis.*—Dr. Brownlee must have given my paper[9] on this subject a very hasty glance, or he would have recognized that not only did it deal with a much more extensive field than Buchanan's—all England as against three counties—but that it was much more elaborate and safeguarded from error; also (most important of all) that instead of leaving the question one of mere surmise, mine left it practically proved that certain geological formations are definitely associated with higher phthisis death rates than others. I say "practically" proved because, until larger populations in pronounced shelter from rain-bearing winds have been dealt with, I shall not consider the investigation complete. Dr. Brownlee's results in Norfolk, Suffolk, and Essex are very suggestive, but, in view of the varying exposures of his districts, must be regarded as inconclusive.

6. *Occupation and Phthisis.*—I wrote in 1913 [10]: "The evil eminence of the tin-miner may not be entirely occupational; he lives for the most part in a district swept by strong rainy winds. Also the Midland coal-miner, who suffers less from phthisis than coal-miners in other parts of England, may not owe his good fortune altogether to the conditions of his work, but partly also to the slighter exposure of his district to rain-bearing winds."

7. *Density of Population and Phthisis.*[11]—I have shown that in certain rainy wind-swept regions the self-protection of a town from winds may more than compensate for its comparative crowding.

PHTHISIS IN WALES.

Dr. Brownlee's section on this subject is instructive and interesting. But I fear he will find the problem of subsoil in Wales as disappointing as he found his Welsh study of rainy winds. I have tried it myself, for I observed how heavy were the death rates on some of the Welsh formations. Rainy winds, race, modes of life and occupation, seem perversely arranged so as to confuse the problem and almost to defy elimination. It will be observed that Dr. Brownlee's map of the districts is almost as suggestive of the effect of rain-bearing wind as of subsoil, when it is remembered that in the east and south-east of Wales the mountains afford much shelter, and that, in the south-east, occupation must modify the figures, the phthisis death rate of coal-miners generally tending to be low. My table of the phthisis death rates in the Welsh registration districts, 1881–90,[11] indicates at least some effect produced by rain-bearing winds.

A MISAPPREHENSION.

Before concluding, I should like to clear up a misapprehension. Dr. Brownlee has referred to me as a "follower in Haviland's footsteps." So far from being a follower of Haviland, I was fortunately quite unaware of his work until I had found the fact on which I lay such stress. Haviland's statements were quite different from mine, and, had I been familiar with them, it is not unlikely that I should have missed my point, as he did.

SUMMARY.

1. Dr. Brownlee has introduced a new method of investigating phthisis death rates at successive age periods which promises to be valuable.

2. He has not proved his first proposition regarding the existence of two or three types of human tubercle.

3. He has himself disproved his second proposition, dealing with the cause of the decline of phthisis.

4. His confirmation of my conclusions in Devonshire in respect of the influence of strong prevalent rain-bearing winds on the prevalence of phthisis, once more emphasizes the necessity for recognizing this influence.

5. Incidentally his papers illustrate the need for applying, in climatological research, what I have called "the principle of approximate isolation of influences."

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FURTHER WORK ON ANTIMONY INTRAVENOUSLY IN FILARIASIS.

BY

LIEUT.-COLONEL SIR LEONARD ROGERS, KT., C.I.E., M.D., F.R.C.P., F.R.S., I.M.S.

LAST year I published a preliminary report on short trials of sodium antimonyl tartrate solutions injected intravenously in filariasis, and showed that the drug had some action in reducing the number of embryo filaria in the evening peripheral blood and in lessening their motility, but I had not been able to follow up the cases long enough to ascertain if the effect was permanent or not, although I had arranged to do so. Thanks to the kindness of Lieut.-Colonel Thornley, I.M.S., Civil Surgeon of Cuttack, I have now been able to follow up a series of eight cases in the central jail of that filarial infected station, with the results recorded in this communication.

Method of Investigation.

Thick blood films of 100 prisoners under sentences of three months and over were sent to me for examination, while 50 more were taken during a visit to Cuttack; all were taken at 9 p.m., which is quite late enough for Indian patients. In 18 per cent. of these healthy men filaria embryos were found, and eight, who showed from 17 to 126 embryo filaria in 20 cubic millimetres of blood and a total of 732 in the eight slides, were selected for treatment. Five controls were also taken with from 22 to 117 filaria in a slide and a total of 168. The blood slides were taken every evening at 9 p.m. at first and later at longer intervals, but always at the same hour, and the injections of a 2 per cent. solution of sodium antimonyl tartrate were given in the mornings. I am greatly indebted to Subassistant Surgeon Kailas Chandra Rao, demonstrator

TABLE I.—*Doses and Amount of the Drug given in Successful and Unsuccessful Cases respectively, and Embryos Before and After.*

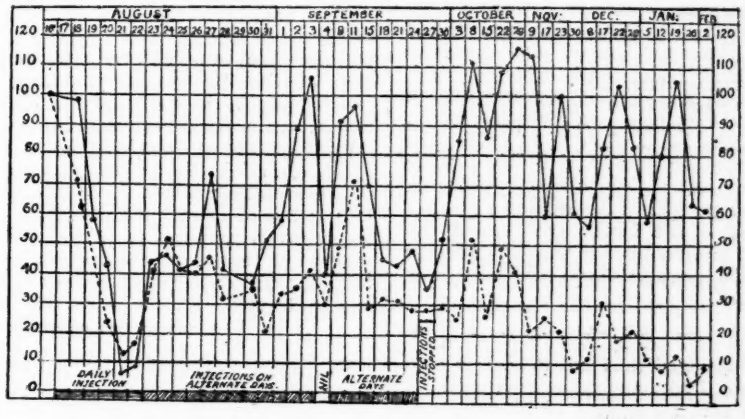
Successful Cases.						Unsuccessful Cases.					
No. of Case.	Doses.	Grams.	Embryo Filaria.			No. of Case.	Doses.	Grams.	Embryo Filaria.		
			Before.	After.*					Before.	After.*	
				No.	Per Cent.					No.	Per Cent.
17	21	1.99	12	0.25	2.1	47	21	1.99	121	83	68.6
71	11	0.79	98	6.25	6.4	62	11	0.79	83	99	112.5
72	19	1.79	126	16.75	13.3	65	19	1.55	77	54	70.0
106	21	1.97	99	1.5	1.5	125	21	1.99	111	35	31.5

* Average of last four weekly counts.

of pathology in the Orissa Medical School, for his careful work in taking the slides and giving the injections. All the counts were made by me.

Doses, Duration of Treatment, and the Effects Produced.

During the first six days the doses were respectively 3, 4, 4.5, 5, 5, and 5 c.cm. of the 2 per cent. solution, after which, as toxic symptoms appeared, the latter dose was given every other day as far as possible up to six weeks from the commencement of the treatment. On one occasion all the injections were stopped for three days on account of toxic symptoms in the form of nausea or sickness, while the same trouble or difficulties due to inflammation of the injected veins reduced the doses in several of the cases, so that the number of doses and the total amount of the drug in grams were as shown in Table I, in which the cases are classed as those who eventually showed very great reduction in the number of the filaria embryos, indicating success of the treatment, and those in which a rapid return to about the original numbers took place as soon as the injections were stopped, showing failure to kill the adult worms.



It so happens that the number of doses given was the same in each group and the total amounts of the drug also almost identical, although the amounts varied considerably in individual cases, showing that it is not yet possible to lay down the amount of treatment required in any given case.

Results of the Treatment.

The results are best brought out by the accompanying chart, showing the percentages of embryos as compared with the original numbers before the treatment was commenced, found at each count, which were made daily for eighteen days, then every third day up to twelve days after the injections were stopped, and finally weekly for the succeeding four months up to the date of discharge from the jail of some of the patients. Separate curves are given of the combined figures of the four successful (broken lines) and of the four unsuccessful cases (continued line) so as to bring out important points of difference between the two, which became apparent on studying the figures obtained during some weeks after the injections were stopped. The two curves closely coincide throughout the course of the injections, although that of the eventually unsuccessful cases showed greater fluctuations and tendency to occasional rises in the number of the embryos than that of the successful ones. Both showed an extremely rapid and great fall in the numbers during the first six days of daily injections to reach a minimum of 13 and 6 per cent. of the original numbers on the fifth day; both showed a considerable rise when the injections were given only on alternate days, while both showed a steady low rate of 30 to 40 per cent. of the original numbers during the last twelve days of the injections. On cessation of the treatment a striking contrast between the two curves for the first time showed itself, for, whereas in the four unsuccessful cases the number of embryos showed an immediate rapid rise, carrying them up to the original count within nine days, in the successful ones there was no rise during the first six days after the drug was stopped, and subsequently only small fluctuations—such as also occurred to an even greater extent in the control cases—accompanied by a steady general decline in the curve to from 13 to 3 per cent. of the original numbers during the last four weeks. In these four cases I think there can be little doubt that the adult female worms had been killed by the antimony salt—a conclusion which I believe is confirmed by an interesting observation I made in the unsuccessful cases—namely, that the rapid increase in the embryos immediately after the injections were stopped was accompanied by the appearance in the slides of very numerous long, thin, and presumably young forms, indicating that the adult females were once more producing a numerous progeny; no such change was noticed in the successful cases. The immediate great rise in the number of embryos in the failures on stopping the injections is also of practical importance, as regular counts on the plan I adopted will enable a judgement to be formed in any individual case as to the duration of treatment required, any rapid increase in the embryos of too sustained a nature to be attributed to periodic variations being an indication for further treatment; the appearance of a number of long, thin forms would point in the same direction.

Variations in the Counts in Control Cases.

During the first seven weeks, and occasionally later, counts were also made by me in the five control cases, and a curve has been worked out showing the variations from the average count. It will suffice to say that, owing to great fluctuations in the one case with a large number of embryo filaria, the percentages varied between 45 and 160 per cent., and showed rapid variations without any very regular periodicity, thus indicating that prolonged and repeated counts are necessary to establish the effect of any given treatment. The control curve showed no such immediate rapid fall as occurred at first in all the treated cases, or any such continued low counts as in the successful cases after cessation of the injections, indicating that the latter were due to the antimony injections.

Periodicity in the Daily Numbers of Filarial Embryos at the same Hour of the Evening.

The periodical variations in the number of embryo filaria in the peripheral blood at different hours of the day and night is well known, but as far as I am aware less attention has been paid to the variations at the same hour from day to day, such as are well illustrated in the latter part of the upper curve of the four cases in which the antimony treatment failed permanently to reduce their numbers. During the four months from October to January there was a regular rise in the numbers at about new moon, and a fall at full moon, which is very suggestive in view of the popular opinion that filarial fever is influenced by the phases of the moon. To examine this hypothesis further I have plotted out the curves of each of the four cases separately, and found that in two months three of the four curves followed this rule, but in the other two months only two of them did so, which indicates that the coincidence in the combined curve is probably accidental. Moreover, the daily counts in the control cases showed great fluctuations occurring at shorter intervals and less regularly. These daily variations are deserving of more detailed study, as they may well furnish a clue to the periodicity of filarial fever, which has always puzzled me, but which may possibly be explained, if the fluctuations referred to are produced by a periodical discharge into the circulation of a large number of newly-born embryo filaria, as, indeed, has been suggested by Bahr. As long as the lymphatic channels are free this need not cause any material inconvenience to the host, but when the lymphatics become blocked by inflammatory changes, then such a brood of young embryos may well cause some further blocking of the lymphatic channels with the excitation of inflammatory changes in the already damaged tissues, without invoking the aid of Manson's hypothesis of the abortion of immature ova. Secondary infections, with staphylococci and streptococci, doubtless also often play an important part in the febrile process, as I (unpublished records), as well as others, have cultivated these organisms from the inflamed superficial tissues of the legs in cases of elephantiasis and obtained considerable amelioration of the febrile attacks by auto-vaccines. On the other hand, cultures during these attacks have often failed, while the frequently very regular periodicity in filarial fever attacks could be more easily explained by the above hypothesis, which may serve a useful purpose if it stimulates further research into the variations of the filarial embryos in the blood from day to day on similar lines to those adopted in my present research, which circumstances will not allow of my continuing at present.

Further Investigations at Puri by Dr. P. N. Das.

In my first paper I mentioned that Dr. P. N. Das was continuing the investigation I commenced at Puri with his help, and he has kindly sent me reports of his progress. As he recently read a paper on the subject at the Indian Science Congress at Nagpur, which will eventually appear in the *Indian Journal of Medical Research*, it will suffice here to say that in five out of eight cases the embryo filaria had completely disappeared from the peripheral blood after from twelve to thirty-seven intravenous injections of sodium antimonyl tartrate, and had remained absent for from a few days up to one month and a half, while in the remaining three cases the parasites had become greatly reduced. Moreover, in two additional patients, who were suffering from weekly attacks of filarial fever, the attacks had ceased under the treatment, and in one case had remained absent up to three and a half months. These are most promising results.

Recent Cases Treated by the Writer.

The following brief notes of cases recently treated by me may also be of interest, although I cannot follow them up very long, as I am about to proceed on leave.

CASE I.—*Early Elephantiasis.*

A European lady consulted me for recently developed swelling of the forearms just above the wrists and of the feet highly suggestive of commencing elephantiasis. The evening blood showed 50 embryo filaria in 20 c.mm., so I gave thirteen injections of sodium antimonyl tartrate, mostly in 4 c.cm. doses, into a small wrist vein, which was the only one available. At the end of this course the swelling had gone down by nearly an inch, only two filaria could be found in 20 c.mm. of blood, and she had lost the slight periodical febrile attacks she formerly suffered from.

CASE II.—*Filarial Orchitis.*

A European patient was admitted to the General Hospital for orchitis; numerous filaria were found in his night blood. Major Green Armitage, I.M.S., very kindly treated him with sodium antimonyl tartrate, and sent me blood films of measured quantities taken at 10 p.m. Counts on five consecutive evenings prior to treatment varied between 44 and 96, and averaged 64. They were also made on alternate evenings while the injections were being given daily, working up to 4 c.cm. of the 2 per cent. solution. During the first ten days of the treatment the filaria varied between 21 (the first day) and 5, and averaged 9, while the next three counts gave 4 on one day and none on the other two days. Another count after only one injection had been given in four days also showed only one embryo in two slides, so as the decrease of the drug has not been followed by any definite increase in the filarial embryos the result is promising.

CASE III.—*Chyluria.*

I am indebted to my colleague, Lieut.-Colonel D. McCay, I.M.S., for an opportunity of treating this Indian patient in the Medical College Hospital. The average of four counts before treatment showed 86 embryo filaria in 20 c.mm. evening blood. The man then received nine injections of a 1 in 500 solution of colloid antimony sulphide, varying from 2 to 6 c.cm., such as I have previously found to be more effective in kala-azar than sodium antimonyl tartrate, while it is very much less toxic for man. This solution, however, failed to reduce the filarial embryos, which averaged 93 on the evenings of the injections. As the solution employed contains only approximately one-fifth the amount of antimony in the sodium tartrate this is not altogether surprising, as such a worm as the adult *Filaria sanguinis hominis* is likely to be more resistant than a minute protozoal parasite to the prolonged action of a colloid preparation, which is retained in the blood longer than a soluble salt.

Dr. P. N. Das has just reported to me four cases in which 5 to 6 injections up to 5 c.cm. doses of the colloid preparation also failed to reduce the filarial embryos, so it is evidently not very active against them, although longer trials might possibly yield better results.

CONCLUSION.

The results above recorded appear to indicate that intravenous injections of soluble antimony salts have a definite effect in greatly reducing or causing the disappearance of the filarial embryos from the peripheral blood, presumably as a result of the destruction of the adult filaria, as the effect may last in some cases in an increasing degree for several months after cessation of the treatment. Moreover, clinically favourable results have been obtained in a few cases of filarial fever and elephantiasis. A rather long course of intravenous injections of a highly toxic drug is, however, required to produce this effect, so the new method of treatment requires care in its use, and much further experience will be necessary before its precise value can be decided.

CYCLOPLEGIA IN ROUTINE REFRACTION WORK.*

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ONE of your number recently put a question to me which may very well form the subject of our consideration to-day. He asked: "What is the best means of obtaining cycloplegia for routine refraction work in children?" That is a very pertinent question. There is a vast amount of refraction work being done for children. A cycloplegic is necessary for satisfactory work. We must be satisfied of the efficiency and safety of the drug used, and that the manner of its usage gives the least inconvenience to the child, its parents, the school teachers, and to your own department where the eye work is done. It is scarcely necessary to defend the statement that cycloplegia is necessary for satisfactory work in children. It is true that, given unlimited time, much skill in handling children and in the use of the mirror, it is often possible to make a good retinoscopy without a cycloplegic; but the most experienced will agree that, even under the best conditions, the results so obtained are open to doubt. When, however, we have to deal with a dozen or more children at the out-patient department of a hospital or a school clinic, it is manifest that without a cycloplegic the work could not be done at all.

* A lecture delivered at the West London Post-Graduate College.

The choice of drugs is happily limited. Homatropine and atropine are the only effective claimants for attention. Hyoscyamus was extensively tried a few years ago, but some rather startling experiences of its toxic effects damped the enthusiasm of its most ardent advocates. I would counsel you to leave this drug severely alone for diagnostic purposes. Homatropine and atropine have each strong points in their favour and it will be well to weigh these.

Homatropine.

Homatropine is a most valuable drug. It is quick in action. Its effects pass off speedily and they can be neutralized at will. I have never known it produce toxic symptoms when administered in the way set out here. Its disadvantages are its high cost and the care necessary to get efficient results. We may use it in a watery solution of the salt, the oily solution of the pure alkaloid, or in one of the minute solid discs or tablets prepared by well known firms. The cost of the drug should rule out the use of the watery solution, at any rate in hospital practice. There is a story that a well known manufacturer of mustard said that he made his fortune out of the mustard that folk left on their plates. Priceless quantities of homatropine have run down the cheeks of patients and watered the floors of out-patient departments. Further, to secure full effects, two to four instillations are required, spread out over an hour. These disadvantages can be overcome by thickening the watery solution. I did this during the war when the pure alkaloid necessary for the preparation of the oily solution was scarce. To the watery solution of the salt small lumps of gum arabic were added and allowed to dissolve until the solution was so viscid that it could be lifted in drops with a narrow probe. If this gummy solution be used it must be made antiseptic, otherwise moulds speedily grow in it. I have found the addition of menthol gr. 2, ol. gaultheria minims 2, and tincture of iodine minims 2 to the pint of water makes a most efficient preservative both for this gummy solution and also for watery solutions of cocaine.

The oily solution of the pure alkaloids of homatropine and cocaine, 2 per cent. of each dissolved in castor oil, forms, in my experience, the most convenient and efficient quick-acting cycloplegic. It needs very careful preparation. The mixture must be warmed gently over a water bath for some six hours to secure solution. Too high a temperature will cause some of the homatropine to be reconverted into atropine, so that the brevity of the effect of the homatropine is lost. The advantages of the oil lie in the small quantity needed and the single instillation. One drop, no larger than the head of a wax vesta, will secure complete cycloplegia of the eyes of a child within one hour, provided it be properly used.

Some years ago, in furtherance of a piece of research work, I worked out the refraction of all the children in a large higher grade school; 1,100 children between the ages of 4 and 14 years were examined. The method adopted was as follows:

Three rooms were chosen leading from one to the other. The group of children to be examined were collected in one with a teacher; one by one they came into the middle room where their eyes were anointed; then each passed into the third room where it was put into a seat and told to put its arms on the desk, its head on its arms, and go to sleep. There they remained for a full hour, when they were told to sit up and look about until wanted for examination. After the examination the effect of the drug was neutralized by the instillation of a minute droplet of eserine 1 per cent. in castor oil, so that the pupils of the eyes were closed down before the children left school. The examination was made with the consent of the parents, many of whom were present at the time. Certain euphemisms helped a successful working. The first instillation was described as "smoothing the eyes with oil," the second as "washing out the oil." That satisfied parental desire to know what was being done. At the first instillation the child was told that it would "tickle"; that made the smart of the oil (rather like soap getting into the eyes) seem a joke. If the smart proved too much for some child so that it cried the fact that no other children were present prevented the disturbance affecting the rest of the children.

The actual instillation of the oil needs skill. The oil should be lifted on a short probe no thicker than a wax vesta. Large glass rods lift too much and make a mess. The child should be told to look at the surgeon's eyes. The surgeon with thumb and forefinger of left hand pulls down simultaneously both lower eyelids so as to expose the conjunctiva, then quickly first one then the other lid is touched with the same oil drop before the child has time to blink. If a blink intervenes between the two anointings the smart will cause the child to screw up its lids, so that the second anointing may be impossible or a failure. Once the oil is on the conjunctiva it spreads over the whole area; it cannot be rubbed out or washed out by tears. It is absorbed over a large area simultaneously and is consequently most effective. The hour of quiescence of the child prevents the muscles striving against the action of the drug. I adopted this practice after noting how quickly deaf children reacted who, after anointing, were kept in a darkened room; with a total absence of stimuli most of the children fell asleep, and cycloplegia was obtained exceptionally quickly. A last point remains to be noted. The children are told to open the eyes and look about shortly before the time of the examination. This is to secure by blinking that the remains of the oil shall be swept away and the cornea left clean and bright.

If some of the eyes be examined by the plane mirror reflex before the completion of the cycloplegia, a curious phenomenon may be noted. The reflex seen in the full round pupil may be divided into two zones separated from each other by a bright circular line, just as though the nucleus of the lens had a different refractive index to the outer layers of the lens. I take it that this is an indication of the gradual relaxation of the lens fibres as the influence of the ciliary muscle is withdrawn, for I noted the phenomenon most often where the error of refraction was a considerable degree of hypermetropia. If at the end of the hour a child's reflex should show this ring mark, the child should be put back to wait a while longer.

With such a procedure as the foregoing, the oily homatropine and cocaine solution can be most efficient and safe in routine refraction work. But it will be evident its use requires time, patience, and spacious premises. A crowded out-patient department does not furnish these conditions, the risk of one child of uncertain temper upsetting the rest of the children by an outburst of crying is great, so that for routine hospital work I prefer atropine for home use.

A word must be said on the solid preparation of homatropine. The minute tablets or discs are most convenient for travelling purposes; they are clean, dry, small in bulk, and efficient. But they are niggly little things, and for that one reason I do not find them so satisfactory for routine use as solutions.

Atropine.

Atropine requires several hours to attain its full action. Once its action is established it is a week before it passes off, and it cannot be neutralized by eserine. Its slowness of action makes its instillation at the same session as the main examination impossible; so that after the child is seen at the first session, atropine must be ordered for home use until the time of the next examination. The loss of accommodation for a week to ten days is unpleasant to children of older years, and their work in the school is practically stopped for the time. These are the real drawbacks of its use; but they are small when balanced by the convenience which its use presents in the heavy routine work of an eye department.

Atropine may be prepared in four forms—(1) watery solution, (2) oily solution, (3) tablets, (4) ointment. The watery solution I rule out because of its extravagance, so much of a watery solution is wasted. Further, bottles and droppers are required and these are costly. The oily solution is also ruled out, for the more costly alkaloid is needed and also bottles. The tablets should, in my judgement, be ruled out also, for the average patient of the hospital class is not up to the task of placing these minute discs within the eyelid. The tiny disc has to be shaken out of a glass tube, picked up with a brush or rod damped to make it adhesive, then the disc has to be transferred to the eyelid. Parents will damp brush or rod by putting it to their lips, an unwholesome procedure. Discs get lost. There is a risk that small children may think they are sweets. And, finally, there is the risk that parents may use pointed instruments to insert the discs and possibly damage the eye of the child by a sudden jerk of the hand or of the child's head.

The use of the ointment avoids these difficulties, and presents certain advantages. It can be kept in bulk in the dispensary, put up in small cardboard boxes ready labelled with a red "poison" label in the quiet times of the dispensary officers, and served out rapidly when the rush comes. I had the curiosity recently to examine the supply issued by the Belgrave Hospital Dispensary. The boxes contained sufficient for use thrice daily for one week. Several specimens were weighed up, and it was found that the average quantity weighed nine grains, the extremes were 7 and 10 grains. The dispenser therefore showed

good judgement in picking up the required quantity with the knife-point.

At the Belgrave Hospital printed directions for the use of the ointment are given to each parent by the surgeon in charge. They read as follows:

BELGRAVE HOSPITAL FOR CHILDREN.
Eye Department.

Put a small piece of the ointment (the size of a match head) inside the lower lid of EACH eye three times every day, after breakfast, dinner, and tea, until you come next time. Use a wax match with the head cut off to put in the ointment.

The eyes will open wide, and the child will not be able to read, but may go to school. The ointment will be stopped when the doctor has examined the eyes and ordered the glasses.

Do not forget to use the ointment, or your visit will be wasted. Be careful with it, for it is very costly. Do not let any one else use it.

From an experience of many years I find these directions are readily understood and carried out by the parents. They have a further advantage, in that the simple explanation of the reasons for the use of the ointment, its effects, and their duration forestall objections from querulous parents.

On the second visit a nurse looks at each child, and should she find one in which the effects look incomplete, she at once puts a drop of the oily homatropine into the eye; the child is put to the end of the row, and is ready for examination when its turn comes.

There are some children for whom this routine practice is unsatisfactory. Children with chronic blepharitis or eyes scarred from relapsing phlyctenular ulcers often react badly to atropine. These are directed to attend very early at the next session, when the nurse prepares them for examination by instilling the oily homatropine.

Adults.

It may be convenient to end this lecture by making a few observations on the use of these drugs for adults. For the examination of young adults, let us say for those over school age up to 30 years, a cycloplegic is often necessary. It should be a rule never to use atropine for these for purely diagnostic purposes. The discomfort and loss of effective work occasioned by the suppression of accommodation and pupil reaction for a week or more is serious, and should be avoided. Consider the circumstances of a clerk, of a seamstress, or of any other skilled worker whose near vision is put out of action in this fashion, or of a driver whose eyes are dazzled by the blaze of light entering his widely opened pupils. In all but the rarest cases the oily homatropine and cocaine solution will do the necessary work then and there, and its effects can be neutralized speedily by a final instillation of the oily eserine. Cases of suspected spasm of the accommodation are few and far between; in these atropine is needed, and should be ordered for home use with due explanation.

In adults over 30 years of age atropine is never needed for diagnostic purposes. It is not only a serious inconvenience to the patient by reason of the dazzling and disturbance of near vision, but there is a serious risk of glaucoma in susceptible subjects. For these reasons, where a mydriatic is needed for effective examination—and you will note that I here use the term "mydriatic" and not "cycloplegic"—the mydriatic should be homatropine. As little as is possible should be used, and that little should be neutralized by eserine before the patient is allowed to leave the consulting room.

THE TREATMENT OF MALARIA.

BY

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THE methods advocated for the treatment of malaria are innumerable. After experience of many hundreds of cases of malaria amongst Europeans in the campaign in East Africa, and after suffering severely myself from repeated attacks, I came to certain definite conclusions as to the treatment of this disease.

1. Routine "stock" treatment often fails, and is justifiable only when the medical staff is insufficient to deal with the number of patients. Every case has its peculiarities.

2. Antimony plays no part in the treatment. Arsenic is most useful in the convalescent stage, especially in cachectic cases, and after the acute stage of blackwater fever, when one or two intramuscular injections of "914" have often seemed to be beneficial.

3. After a preliminary dose of calomel or blue pill, quinine, preferably the hydrochloride, should be given as early as possible in an attack of malaria. *Bis dat qui cito dat.* Ten grains in a small quantity of water should be given every three hours to a maximum of 45 grains. The aim should be to produce tinnitus aurium, and the dose regulated accordingly. The heroic dose (20 or 30 grains) is not more effectual than the smaller, and is far more liable to incite vomiting. I doubt whether, by the mouth, one can absorb more than 10 grains of quinine during the course of two or three hours. At the same time the patient should drink freely of water, lemonade, etc. But all food, even milk, should be withheld during the acute stage, and even for several hours after defervescence.

4. In most cases this form of treatment will suffice. Vomiting is the commonest and most troublesome complication. A dose of quinine, if rejected, should be repeated—two or three times, if necessary. A little firmness is often necessary, especially with a patient who has made up his mind that he cannot retain quinine. A large tender spleen, which often incites vomiting, is less felt after the application of a plaster and by lying on the left side.

5. The chronic cases present the greatest difficulty. We rely too much on drugs and pay too little attention to the stimulation of the patient's natural powers of resistance. The advocates of various forms of treatment in claiming their successes forget the *vis medicatrix naturae*. Even quinine fails when a patient is kept in a relaxing, unhealthy climate; while in healthier surroundings relapsing cases tend to get better, even without the use of drugs. I do not believe in the long-continued administration of quinine, even in small doses, whether as a curative or as a prophylactic measure. I suspect that the *plasmodium* becomes resistant to quinine in course of time; or perhaps the drug, owing to its irritant action, becomes less easily absorbed in the intestinal tract.

In chronic cases the relapses should be treated intensively and early. To give quinine between the attacks is to bombard the enemy's line when he is safe in his dug-outs. Rather the aim should be to catch him when he makes his raids.

6. Only in cases of uncontrollable vomiting, in cerebral and in a few other complications will it be necessary to administer quinine otherwise than by the mouth. In my opinion, subcutaneous and intramuscular injections are always contraindicated. High rectal and intravenous injections, slowly given, rarely fail to influence an attack in the acute stages. The most useful proof that we have of the absorption of quinine is the production of tinnitus aurium and slight deafness. Only after big doses and a long interval (a day or so) did we obtain this effect after subcutaneous and intramuscular injections. There is no evidence that quinine is absorbed sufficiently quickly from the muscles and subcutaneous tissues to be of any use in an attack of malaria, and the other disadvantages are obvious.

7. A great physician said that a man who could not control malaria with quinine should give up the practice of medicine. Drugs must be given with the head as well as with the hand. The ideal of a *therapia magna sterilisans* has so far proved illusory. Quinine is as much a specific in malaria as is arsenic in syphilis, but in both cases there is a time to give and a time to refrain from giving.

8. Blood films should be taken not once but several times during the course of an attack, and treatment judged and regulated accordingly.

Attention to these details will, I think, be rewarded by greater success in the use of quinine by the mouth than seems to be the experience of many medical officers, and more complicated methods of treatment will more rarely be necessary.

The following extract from Buchan's *Prevention and Cure of Diseases* (London, 1774) is of interest:

> After proper evacuations, the patient may safely use the Peruvian bark. Two ounces of the best jesuit's bark, finely powdered, may be divided into twenty-four doses. In an ague which returns each day one of the above doses may be taken every two hours . . . in a tertian, or third-day ague, it will be sufficient to take a dose every third hour.

There is much other sound advice, and the last words of the chapter on agues are "the only method to obtain a

safe and lasting cure is gradually to assist Nature in removing the cause of the disease." This is an axiom too often overlooked.

A CASE OF TUBERCULOUS MENINGITIS WITH COMPLETE RECOVERY.

BY

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ALTHOUGH tuberculous meningitis is almost always fatal, most physicians with a wide experience have seen one or two cases which have suggested that recovery is possible. Most of these have been in children, with perhaps only partial subsequent recovery; and only in few cases has the diagnosis been proved bacteriologically.

These notes record the case of an adult, proved bacteriologically to have tuberculous meningitis, who has made a complete recovery. Had one supposed that the patient could get well, fuller clinical and pathological investigations would have been undertaken; but, although only one examination of the cerebro-spinal fluid was made, it is possibly more reliable in that there was no knowledge in the laboratory of the patient's antecedent tuberculous infection.

Clinically the case was never doubtful; the first lumbar puncture was performed in the fourth week of the illness, to relieve symptoms of intracranial pressure; the benefit was considerable, as was also the case after the second and third punctures; and although the fourth puncture, made in the eighth week, did not seem to do any good, and the case was regarded as hopeless, I certainly think that but for the earlier lumbar punctures the patient would have died from increased intracranial pressure.

A woman, aged 37 years, admitted on June 11th, 1919, was discharged quite well on December 14th, 1919.

Past History.—Twelve years ago she was treated by Sir Richard Luce, who removed a tuberculous kidney; has been quite well since.

Present illness began one week before admission; pains in limbs followed by intense headache; when seen in consultation with Dr. G. D. Moon two days before admission she was very irritable and rather excited; neck stiff, severe headache.

On Admission: Temperature 100°, pulse 88, respirations 24; drowsy, but at times very restless; head rather retracted, neck and legs stiff, Kernig's sign present, reflexes normal; no strabismus; lungs and heart normal; urine normal.

Diagnosis—in view of the symptoms and history—was never in doubt. Lumbar puncture was not performed until July 1st; the fluid was under pressure, appeared clear, and contained a few lymphocytes; tubercle bacilli were found.

Course.—For thirteen weeks the temperature was of an irregular intermittent or remittent type, usually reaching 102° or 103° in the evening; the pulse was irregular, but usually below 100, until the ninth or tenth week, by which time there was an extreme degree of prostration; the general condition varied between coma and delirium, with signs of distress and headache. In the twelfth and thirteenth weeks the temperature was not so high, and from the fourteenth onwards it was normal or subnormal, and she made a slow but steady convalescence. She was taking full diet in the nineteenth week. On her discharge in the twenty-eighth week, after having gained 18 lb. in eight weeks, she was perfectly well in every way. Her mental condition was normal, and there was no loss of memory, nor headache; the eyes were quite normal and the limbs were strong, with no rigidity nor increase of reflexes. Three months after discharge she returned to her household duties, looking and feeling quite well.

Lumbar puncture was not performed until the fourth week from the onset; it seemed to relieve the symptoms of intracranial pressure, and was repeated in the fifth, sixth, and eighth weeks (four times in all), but there was little relief if any after the last time, and the case was regarded as hopeless. On one day in each of the tenth, eleventh, and twelfth weeks morphine was administered to relieve noisy delirium.

Specific therapy in tuberculosis is not very satisfactory at present, but most infected persons have good natural powers of recovery. Possibly repeated lumbar puncture is worthy of routine trial in cases of tuberculous meningitis; by the opportune relief of intracranial pressure an odd case or two may "get its chance."

G. BOUCHÉ (*Le Scalpel*, March 6th, 1920) records two typical cases of lethargic encephalitis which occurred at Anderlecht and Lens (Hainault) respectively. Two other cases had recently been recorded to the Medico-Chirurgical Society of Brabant and others had been observed in the neighbourhood of Bruges.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

NOTES OF TWO CASES OF HORSESHOE KIDNEY.

THE following two cases of horseshoe kidney were both discovered in the course of operations for renal calculi. In neither of them did the symptoms nor the examination of the patients give any indication of the presence of the abnormality. The condition itself, of course, does not usually give rise to any definite symptoms, and it is the exception for it to be diagnosed previous to operation or until a *post-mortem* examination is made, although in recent years a certain number of the more marked cases with abnormality of the pelvis or ureter have been diagnosed by the use of the cystoscope and pyelography. The frequency of its occurrence has been variously estimated: Morris,[1] from *post-mortem* examinations, places it at 1 in 1,000, but Thompson[2] puts it as high as 1 in 300. There is, however, a marked tendency for these kidneys to be the seat of pathological changes, so that the possibility of encountering it at operations on the kidney is probably higher than these statistics would indicate.

CASE I.

A woman, aged 33, gave a history of attacks of pain in the left lumbar region for two years. They came on suddenly, sometimes with vomiting and with pain radiating towards the groin. No definite tumour could be felt in the left renal area, but there was tenderness and some rigidity of the muscles. The urine contained a small amount of pus. An *x*-ray photograph showed the shadow of a large calculus in the left kidney.

Cystoscopic Examination.—The bladder was healthy and the ureters normally situated. The right ureter was normal, and urine could be seen coming from it; the left was somewhat swollen and congested, and no urine was seen coming, although it was seen to contract. Indigo carmine was injected into the buttock, and was seen coming freely from the right ureter in twenty minutes, but none came from the left even at the end of forty minutes. Catheterization of the ureters confirmed this, normal urine being obtained from the right and nothing from the left.

Operation.—The left kidney was exposed by a lumbar incision. It was found lying rather lower than usual. There was a large stone in the pelvis, and marked atrophy of the kidney substance. The lower pole could not be brought up, and on further investigation it was found to be attached by a thick band of tissue to the lower pole of the right kidney. The right kidney lay partially across the middle line and its lower pole, which appeared normal in shape, could be distinctly seen. The connecting tissue was divided, and the left kidney removed. The patient made an uneventful recovery.

Specimen.—The kidney consisted of thinned and atrophied renal tissue round the pelvis, which was contracted on a stone the size of a bantam's egg. The connecting isthmus was composed of fibrous tissue.

CASE II.

A man, aged 29, gave a history of attacks of severe pain in the left renal region for about a year. The attacks were occasionally followed by slight haematuria. In the intervals he was perfectly well. Nothing abnormal was detected in the renal region. The urine was normal. An *x*-ray photograph showed a small shadow in the left renal area.

Cystoscopic Examination.—The bladder was healthy, and both ureters were normal and in the usual position. Indigo carmine was injected, and appeared freely at both ureters in twenty minutes.

Operation.—The kidney was exposed by a lumbar incision. It could only be partially raised up with some difficulty. The pelvis was small, and was situated on the anterior aspect, and behind it there was a mass of kidney substance about 2 in. broad extending across to the right side in front of the great vessels. The renal vessels entered the kidney from above and in front of this tissue. A small stone was found in the pelvis, and was removed by nephrolithotomy. When seen a year later the patient was perfectly well and had no pain or discomfort.

These two cases illustrate two of the varieties of horseshoe kidney: the first, where the lower poles are united either by fibrous tissue or by actual renal tissue, is probably the commoner; the second is not so common, as here the connecting renal tissue passed from the posterior part of the left kidney, and both poles were distinct and unattached. The fact that this second case was well and able to do manual work a year later is of interest in view

[1] Morris: *Surgical Diseases of the Kidney and Ureter.*
[2] Thompson: *Annals of Surgery*, September, 1911.

of Rovsing's[3] description of symptoms of discomfort and inability to do heavy work from the presence of the renal isthmus in the middle line.

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FOREIGN BODY IN THE LEFT BRONCHUS.

ON June 17th, 1919, I was asked to see a girl, aged 11, in the Oldham Royal Infirmary. The story was that on June 14th, while playing with a toy air balloon, she laughed, the balloon disappeared into her mouth, and she became cyanosed and could not speak. She rushed into the street, attracted the attention of a man there and, by pointing to her mouth, indicated what was wrong. He inserted his finger into the child's mouth and "pushed something down her throat." She was then able to breathe with comfort and to speak.

When I saw her, three days after, she looked like a patient suffering from pneumonia, very different from the picture of laryngeal or tracheal obstruction. The cheeks were flushed, the temperature 101°, respirations 46, pulse 104. She had slight cough, with a little muco-purulent expectoration. The whole of the left lung was dull to percussion; the breath sounds were markedly diminished over the whole of the left side of the chest, and resonance was slightly increased.

From the story and the physical signs I concluded that the object, described to me as consisting of a wooden mouthpiece, with elastic balloon attached, was in the upper part of the left bronchus. No skiagram was taken, as I considered the chances of seeing any shadow small, and I did not wish to move the patient any more than could be helped, on account of the risk of moving the object into the trachea or larynx.

The patient was anaesthetized with chloroform. A Brüning's tube passed through the glottis showed the mouthpiece of the balloon about three-quarters of an inch below the bifurcation of the trachea, in the left bronchus, with the balloon folded between the mouthpiece and the spur of the bifurcation. The mouthpiece seemed pretty well fixed. Cocaine and adrenalin were applied to the spur and to the left bronchus above the object, which was gently freed with Brüning's spoon forceps, and then removed at the end of the tube with Paterson's forceps. The whole operation was comparatively simple, as it was easy to see and seize the object. The patient was perfectly well and the lung appeared quite clear in four days.

The wooden mouthpiece was 1¼ inches long, $\frac{3}{16}$ of an inch in diameter, and slightly expanded at either end. The fabric was more than twice the length of the mouthpiece, but being very thin occupied little space.

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THE INCISION IN CAESAREAN SECTION.

IN connexion with the discussion on the incision for Caesarean section (BRITISH MEDICAL JOURNAL, November 15th, 1919, p. 633) the following facts may be of interest:

Since August, 1908, there have been ninety-two such operations at the S.P.G. Mission hospitals at Delhi and Karnal, Punjab; I performed twenty-two. Eight women were delivered by this method for the second time. In three cases I was the operator, and in two others I assisted. The line of incision adopted by me and most of the other surgeons has been the longitudinal in the upper part of the uterus, and the stitches (of silk or catgut) have been through the depth of the uterine wall not including the mucous membrane, with a second row of superficial stitches.

It was interesting to note that of the five "second Caesareans" within my experience only one had any signs of a scar in the uterus; the first operation on this patient had been performed eight years earlier in Quetta, and the scar was situated in the lower uterine segment. A few adhesions and the abdominal scar were the only indications of any previous operation in the others.

In contrast to what is usually taught in the British Isles, we have found that although almost all these cases have been in labour for three or four days, and have been examined by untrained native midwives before admission to hospital, we have had no cause to regret leaving the uterus *in situ*. The patients who have died have been few in comparison with the number who seemed so hopeless on admission that it was inadvisable to add to the shock by hysterectomy.

S.P.G. Mission, Delhi. MINNIE W. BAZELY, M.D.

[3] Rovsing: *Zeitschr. f. Urol.*, 1911, vol. v, No. 8.

Reports of Societies.

RUPTURE OF VAGINA.

AT a meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine held on April 8th, with the President, Mr. J. D. MALCOLM, in the chair, Dr. A. C. PALMER read a short communication on two cases of rupture of the vagina during labour, admitted to the obstetric department of the London Hospital.

Case 1.—An 8-para, aged 35, was brought by her doctor, who stated that the case was one of prolonged second stage with the head delayed in the pelvis. He had extracted a child, stillborn, weighing between 13 and 14 lb., after a hard pull with forceps. The perineum was torn. The placenta did not follow, and since the patient continued bleeding he decided to remove it. Following the umbilical cord, his hand passed into the abdominal cavity, where he found and removed the placenta. The case was then brought to hospital. Pulse 120, temperature 98° F., abdomen very tender. The uterus was found almost completely separated from the vagina, except for a narrow bridge in the region of the left uterine artery, and a small portion of the anterior wall of the cervix close to the bladder. There was much free blood in the peritoneal cavity. The uterus was removed as rapidly as possible, and the patient made a good recovery. Dr. Palmer believed that the difficulty was due to relative pelvic contraction owing to the very large size of the child.

Case 2.—A multipara was brought to hospital in a state of collapse (pulse 120, temperature 96.5° F.) by a midwife, having been in labour twenty-four hours. There had been good pains for fifteen hours, and since then the pains were described as tempestuous and different in character from the preceding ones. No manipulation and only one vaginal examination had been made. On the right of the fetus was a hard tumour about the size of a fetal head, and thought by the resident accoucheur to be possibly a fibroid. A moderate pull with forceps being unsuccessful, the child was delivered after perforation and crushing of the head by Mr. V. J. F. Lack, the resident accoucheur, who then noticed that the tumour was the contracted uterus, and that the child had been lying in the abdominal cavity, whence the placenta was removed manually. At an exploratory laparotomy Dr. Palmer found a large T-shaped tear in the posterior vaginal wall, beginning at the cervico-vaginal junction and extending almost down to the vulva, and much free blood in the peritoneal cavity. The uterus was rapidly removed. The patient was now convalescent. Four easy labours had occurred in spite of well-marked general contraction of the pelvis; the fifth had required forceps; the sixth was the case described.

In each case the object of the hysterectomy was the control of haemorrhage and the removal of damaged and devitalized tissue as a prophylactic against puerperal sepsis.

Mr. EARDLEY HOLLAND said that rupture of the vagina in association with rupture of the lower uterine segment was much more common than was generally believed. It was not sufficiently realized how very greatly the vagina was stretched and drawn up by the uterus during obstructed labour. As an example of this he gave an epidiascopic demonstration of sections through the lower uterine segment from the case of a patient who had died undelivered during obstructed labour. In this case the retraction ring lay at a level of 11.5 cm. above the symphysis pubis, and below the ring the fetal head was enclosed by what was at first thought to be an enormously distended and elongated lower uterine segment. The sections showed, however, that only the upper 4.5 cm. consisted of the extended cervix, all below that consisted of the elongated and stretched vagina. The sections further demonstrated that in this case the lower uterine segment consisted of cervix only; if rupture had occurred, it would almost certainly have been in the vagina.

Dr. HERBERT SPENCER said that it was sometimes difficult to see the line of demarcation between the cervix and vagina in the second stage of labour, but he thought it was

absurd to speak of the vagina as taking part in the formation of the lower segment of the uterus.

Blood Transfusion before Operation.

Dr. HERBERT WILLIAMSON read a note on the value of blood transfusion before operation in severe secondary anaemia.

A patient, aged 45, was admitted to St. Bartholomew's Hospital on May 11th, 1919. She was extremely anaemic and breathless; pulse 130 and of poor volume, temperature 101°. There was incontinence of urine and faeces, frequent vomiting, and the urine contained albumin. The blood count was 1,670,000 red cells and 52,000 white cells per c.mm., haemoglobin 22.5, and colour index 0.7. There was a history of continuous and profuse vaginal bleeding for a month prior to her admission. On examination, a large hard tumour could be felt reaching from the pelvis to the costal margin. After admission the patient gradually became more ill; the temperature rose to 102° to 104°, vomiting was frequent, and incontinence of urine and faeces persisted. On the 17th the red blood cells had fallen to 845,000 and the white had risen to 65,000 per c.mm. On this day the patient was transfused with 600 c.cm. of blood derived from a donor belonging to Group IV. Three days later the temperature was normal, vomiting had ceased, the patient had regained control over the rectum and bladder, the red blood cells had risen to 3,400,000 and the white had fallen to 29,000 per c.mm. On June 5th Dr. Williamson operated and removed the uterus, enlarged by the presence of multiple fibroids, together with a cyst adenoma of the ovary. The patient made an uninterrupted recovery and left the hospital well at the end of three weeks. On the day of discharge the red cells numbered 4,250,000 and the white 10,400.

Dr. MALCOLM DONALDSON said that the astonishing results obtained on the wounded during the war had advanced this line of treatment enormously. At the same time he feared that the method could not be used in emergencies until some reliable way of storing blood without interfering with its action had been devised.

The PRESIDENT stated that the subject was of the utmost practical importance. When successful, the effects of the transfusion of blood in suitable cases were almost miraculous. He asked for details of the method employed.

In reply, Dr. WILLIAMSON said that the method of transfusion adopted was that described as the "citrated method," and the apparatus employed was that devised by the late Dr. Stansfeld. In answer to Dr. AMAND ROUTH, he said that whenever possible he preferred to use blood, but if this was not available he would use the 6 per cent. gum arabic solution as recommended by Bayliss.

High Ammonia Coefficient.

Lady BARRETT read a short communication on high ammonia coefficient.

A munition worker, aged 22, married, was admitted to the maternity block of the Royal Free Hospital when nearly three months pregnant, having been vomiting frequently for six weeks in spite of treatment. Her urine was greatly diminished —7 oz. in twenty-four hours—contained slight traces of albumin and diacetic acid, and the ammonia coefficient two days after admission was 38, rising within a few days to 78. The vomiting was controlled by abolishing all mouth feeding for a few days and the administration of glucose salines per rectum; ordinary food was gradually resumed, albumin water, oranges, and tea being first retained. The excretion of nitrogen as ammonia gradually declined after a few recurrent rises with renewed vomiting, and was 19 per cent. of the total nitrogen when the patient left hospital. The pulse remained at 80 to 84 throughout, and the temperature was normal. Diacetic acid and albumin appeared from time to time, but were not constant. It was not found necessary to induce labour, and the patient was delivered of a normal child on February 15th, 1919, her nitrogen excretion at that time being normal.

The case seemed to indicate that a consideration of the general condition, especially the pulse, the quantity of urine passed, and the presence or disappearance of diacetic acid in the urine, was of more importance than a high ammonia coefficient in deciding the necessity for induction of labour.

Dr. MACKENZIE WALLIS raised as an important point the question as to the method used in the determination of the ammonia in the urine, as he thought it possible that the amino acids might be included in this result. In pregnancy toxaemia the diastase was always markedly increased, and there did not seem to be any relation between the high ammonia coefficient in this case and the presence of aceto-acetic acid in the urine. He gave particulars of a case of persistent vomiting, in the wards of St. Bartholomew's Hospital, which he was investigating. He had come to the conclusion that the ammonia coefficient was of no value either for prognostic or operative purposes, and that it did not bear any definite relation to the severity of the toxaemia.

Dr. T. W. EDEN gave details of a similar case he had had under observation, and said that he thought the excessive vomiting might have been a factor in the high ammonia excretion.

Dr. LAPTHORN SMITH mentioned the success that he had obtained by treating vomiting of pregnancy with sodium bicarbonate.

In reply, Lady BARRETT stated that during the patient's first illness no difference was made between the amino acids and ammonia, but that later investigations in February, 1919, showed that the average difference between the amino acids and ammonia was approximately 2 per cent. Diacetic acid was present only in traces. She agreed that the excessive vomiting might have been a factor in the high ammonia excretion. She had tried sodium bicarbonate in salines in toxaemic cases without any appreciable difference in the results from salines without carbonate.

ANTE-NATAL AND POST-NATAL SYPHILIS.

A MEETING of the Hunterian Society was held on April 14th at the Venereal Diseases Centre for Pregnant Women, 18, Thavies Inn, Holborn Circus, E.C., by invitation of Mr. JOHN ADAMS, F.R.C.S., who demonstrated cases treated at the Centre and the methods used in treatment of syphilitic mothers and their babies. A large number of Fellows were present, and the cases described and demonstrations given were followed with keen interest. As recorded in this JOURNAL, the Centre was established in 1917, and the results set out gave a good idea of the type of work done there and the great advances made in treatment, particularly of syphilitic babies.

1917-18:

Total number of syphilitic mothers treated at the Centre	28
Babies of these mothers born with a positive Wassermann reaction	17
Babies born with a negative Wassermann reaction	6
Stillborn babies	5

Of those with a positive Wassermann reaction at birth 3 died—one aged 6 hours, one aged 14 days, one aged 36 days.

1918-19:

Total number of syphilitic mothers treated at the Centre	30
Babies with a positive Wassermann reaction ...	8
Babies with a negative Wassermann reaction ...	21
Stillborn baby	1

Of those with a positive Wassermann reaction one died aged 2 months.

Nine cases of this series were shown at the meeting, as also the babies ranging in age up to 2½ years. The results of the treatment were obvious from the appearance of the mothers and their babies. The statement was made that every child born during the past year and actively treated at the Centre was free from any syphilitic manifestations. As a result of his experience, Mr. John Adams concluded that treatment of the pregnant woman could be carried out up to the day of confinement with safety and success, and a mother so treated might be delivered of a child whose blood gave a negative blood test. Such a child might thrive and continue to give a negative Wassermann test. Treatment of syphilitic infants began immediately after birth. The combined intramuscular injection of galyl in glucose and of grey oil succeeded in producing a negative Wassermann reaction with greater rapidity and more certainty than if galyl alone were used. Children so treated appeared to become quite healthy, put on weight, and their blood, which previously gave positive reactions, became negative and remained so. The mode of administration of the galyl solution to babies was demonstrated, and the importance of intramuscular injections of a solution of galyl in glucose solution emphasized.

A dose of 1.5 cg. of galyl is injected into one buttock on the first day of birth, and repeated after one week. From this time onwards gradually increasing doses are given up to 5 cg. at fortnightly intervals. This treatment after the first week is combined with intramuscular injections of mercury, beginning with ¼ grain, then ½ grain, and ultimately ¾ grain. In addition hydrargyri cum creta is given orally. The mercury is given in

the form of grey oil, 20 per cent. strength for the babies and 40 per cent. for the mothers. A special syringe is employed, with 15 divisions each of $\frac{1}{10}$ c.cm. capacity, and so arranged that one division in the syringe corresponds to 1 cg. of mercury, when the 40 per cent. grey oil is used. The intramuscular injections are given into each buttock every fortnight to the babies, and weekly to the mothers.

A rapid and easy method of collecting blood for the Wassermann test from the heel of an infant was also demonstrated. The whole foot of the infant is immersed in hot water, carefully dried, and the foot gripped with the left hand. By means of a sharp needle three stabs are made close together in the base of the heel. By means of gentle squeezing the blood can be "milked" out of the heel and a sufficient quantity of blood removed with ease and rapidity.

As a general rule, with this combined treatment, the Wassermann test is negative before or about the seventy-eighth day. Where the Wassermann test is found to be definitely positive at any future time or after the 176th day of treatment by intramuscular injections of galyl glucose solution and grey oil, then it is necessary to start the treatment again.

The President of the Hunterian Society (Dr. LANGDON BROWN) voiced the opinion of the meeting in thanking Mr. John Adams for his excellent demonstrations. The Society last year conferred its Hunterian medal upon Mr. John Adams for this pioneer work on ante-natal and post-natal syphilis. The medal is awarded annually for the best individual effort of a general practitioner resident in Great Britain and Ireland in advancing the science and art of medicine.

TUBAL STERILITY.

AT the meeting, held on February 20th, of the Section of Obstetrics of the Royal Academy of Medicine in Ireland, the President, Dr. HASTINGS TWEEDY, showed his instruments for passing catgut through the tube. He said that a fine stiff needle with a blunt point should be used; it should pass first through the ovary, where the catgut should be knotted, then through the tube, and lastly through the mucous membrane. Mucous membrane should be sewn to mucous membrane. In every case of sterility the tubes, even though apparently normal, should be tested for permeability by the air test. The impervious part should be cut away. It had been suggested that the short tube would prevent pregnancy, but he had seen pregnancies in women whose tubes were certainly not more than $1\frac{1}{2}$ in. long.

Dr. SOLOMONS said the paper dealt not so much with tubal sterility as with sterility in women with long tubes. He would feel very diffident about resecting tubes just because they were long. He blew them up with air when there was a kink and resected them, not on account of their length, but because of disease. In excision for length did Dr. Tweedy have the excised part examined microscopically? In view of the difference in bore of the parts to be brought into apposition, that of the smaller one being only $\frac{1}{25}$ in., the removal of the uterine ends of both tubes in these cases was a very big undertaking. The instruments, he thought, would prove very useful. When resecting a tube he did not use forceps, but had special needles, the ends of the tubes being held one by him and one by an assistant, in an end-to-end anastomosis; but Dr. Tweedy was dealing with resection of the uterine ends of the tubes. This question of sterility embraced all the pathological conditions in the tube. Since October, 1919, when he read the opening address in the Biological Society, he had seen many cases to prove that the tubes were usually at fault—many without gross lesions. It was difficult to know what to do in these cases. If the abdominal end was diseased, a new ostium should be made and the fimbriated ends removed; if the middle part, he performed an end-to-end anastomosis, using a long straight needle, and resecting the tube when catgut had been passed through the lumen. In cases of disease of the uterine end the prognosis was very bad, especially if the condition was bilateral. He wished to know through what part of the ovary the catgut passed before going through the tube, and if this step were necessary. He thought any ova in the neighbourhood should find their way into the tube without help.

Dr. SHEILL said that the first thing to prove was that a woman was really sterile, or successes might be claimed which were not earned. He was not sure that dilatation of the tubes with air was a sufficient test of the condition of the tubes. The only proof of sterility was a microscopic examination of the parts removed. With regard to the passage of the needle, if a false passage were made at the uterine end it was possible that the epithelium would follow this, especially if chromicized gut were used instead of ordinary six-day catgut.

The MASTER OF THE ROTUNDA said that the getting into apposition of the wide and narrow parts of the tube was the great difficulty.

Dr. TWEEDY, replying, said he hoped that by next year the technique of the operation would be greatly improved. Dr. Solomons had referred to the long tube. The speaker said not that a long tube should be resected, but that a long tube which was obstructed, as most long ones were, should be resected. He had observed the greatest difference in the calibre of tubes in different individuals. As regarded the microscope test, serial sections would have to be taken of the $1\frac{1}{4}$ in. of tube removed; the obstruction might only be $\frac{1}{100}$ of a millimetre. He thought the method employed by Dr. Solomons would lead to tubal pregnancy, as it had done in one case already, and also in one of his own cases when this method was employed.

He related this case, in which he resected one tube for concretions, the other being almost normal; this patient had a fixed retroversion. An end-to-end anastomosis was done, and she returned to Steevens's Hospital still sterile. The abdomen was opened; the anastomosis was found to have given way and the lumen had become closed. The tube was again resected, and the woman appeared at the Rotunda Hospital with a tubal pregnancy on the side of the resected tube. It was possible to pass a big sound through the fimbriated extremity to the uterus, and the probe could pass over the ovum into the uterus.

The other tube would not let anything through, therefore the technique was at fault. A continuity of epithelium was absolutely necessary. He used to agree with Dr. Solomons that tubal pregnancy was due to inflammation, but now believed that the lack of epithelial continuity was responsible. Blair Bell had a case of pregnancy after stitching the fimbriated extremity to the cornu of the uterus.

CLASS FERTILITY IN ENGLAND AND WALES.

AT a meeting of the Royal Statistical Society on April 20th, with Sir BERNARD MALLET, K.C.B., in the chair, Dr. T. H. C. STEVENSON, C.B.E., read a paper on the fertility of various social classes in England and Wales from the middle of the nineteenth century to 1911, based upon the information obtained in the last census as to the duration of marriages and the number of children born and surviving. Dr. Stevenson stated that in considering the differences in fertility between various sections of the population it was necessary to bear in mind the differences in their recorded child mortality. Taking the population as a whole, large families implied high, and small families low, child mortality; it was possible, therefore, that the small families of the middle classes were in part due to the low mortality of their children, as well as the latter to the smallness of their families. In a typical case—wives married at 20 to 25 whose marriages had lasted fifteen to twenty years—child mortality rose from 102 per 1,000 born in one-child families to 339 in twelve-child families, and 407 in those of over twelve children. This was due to the rapidity of births implied as well as to their number. At the same time high fertility did not necessarily involve high mortality. Agricultural labourers were 37 per cent. more fertile than textile workers, but the mortality of their children was 35 per cent. less. In measuring the fertility of the various social grades allowance must be made for the difference in the average size of families and the age at which it was customary to marry in the given class. Dr. Stevenson described the method of standardization which had been used for making this allowance, and the way in which the class division had been made for the purposes of this inquiry. It was, of course, necessary to infer the social status of families from such facts as the census offers, and those relating to occupation were found in the end to provide the most satisfactory basis.

The classification is into eight social groups. Of these, Classes I to V are in descending order of the social scale, Class I including the upper and middle classes and Class V unskilled labour, while Classes VI, VII, VIII consist of textile workers, miners, and agricultural labourers. The results obtained not only confirm previously published statistics in showing that fertility increases downwards throughout the

social scale, but they also suggest that this difference is of comparatively recent origin—in other words, that the defective fertility of the classes which are presumably the most successful and efficient, is a new fact, the consequences of which are not yet apparent and will have to be faced. Comparatively little class variation in fertility is observable in marriages contracted before 1861. Marriages of more recent date have been subject to the influences, whatever they may be, which have led to the fall in the birth rate from 1877 onwards. Their fertility has rapidly declined, and at the same time the class variation has greatly increased, which suggests that artificial restraint of fertility is the main cause of its decline. This is confirmed by several other facts. The decline began in the higher social strata and spread gradually downwards; occupied mothers show a very low fertility; and infertility increases in the higher classes with increase of marriage duration up to twenty-five years. It is to be noted that the comparatively low mortality in these, the less fertile classes, goes very little way towards compensating for their low fertility and that the classes which are least fertile are also those which marry late in life. The lowest fertility rates of all are those of the professional classes; persons describing themselves as of "private means" also show a very low rate. These are all included in Class I, the smallest of the five graded classes, but by far the most heterogeneous socially.

In two interesting tables Dr. Stevenson showed the detailed rates of fertility and child mortality for a few of the constituent occupations of Class I. The lowest fertility quoted was that of naval officers, and the highest rates were those of clerks and of commercial travellers. Outside Class I, textile workers came far down in the scale, and Dr. Stevenson considered that this might be due to the extent to which the wives worked in the mills. He concluded his paper with some figures relating to the effect of female occupation upon married fertility, which showed that the fertility of occupied wives was, almost without exception, considerably lower than that of all wives whose husbands had the occupation in question. The fertility of male teachers, for instance, was 70 per cent. of the average for all classes, but that of female teachers was only 52 per cent.

SURGERY AT THE ENDELL STREET HOSPITAL.

AT a meeting of the London Association of the Medical Women's Federation held at 11, Chandos Street, W., on April 20th, with Dr. HELEN BOYLE in the chair, Dr. GARRETT ANDERSON, C.B.E., formerly chief surgeon to the Military Hospital, Endell Street, gave an account of the work at that hospital from 1915 to 1919, illustrating her remarks with lantern slides. She said that the surgical work fell into three groups: In 1915 to 1916 large numbers of head wounds were received, and fractured skulls, with every kind of complication, were treated; in 1916 and 1917, compound fractures of thigh were received; in 1918, a fine series of penetrating wounds of joints, especially the knee-joint, were admitted. She emphasized the valuable results obtained by the use of bipp, which was first tried in 1916. It was used afterwards for a very large number of cases of compound fracture, and always with the best results. It replaced other disinfectants. It minimized the ward work enormously, as cases which previously had been dressed twice or thrice daily were left undisturbed with bipp for a week or more. It improved the prognosis of cases in a striking way and shortened the time of treatment in hospital. Over 26,000 men passed through the hospital and 7,000 operations were performed; 300 beds were set aside for orthopaedic cases. The speaker discussed the advance in the treatment of fractured thighs and wounds complicating joints. By disciples of Sir Robert Jones—notably, Major Sinclair, R.A.M.C., and Major Everidge, R.A.M.C.—the treatment of these cases had been revolutionized. In 1914 a case of compound fracture of the femur was a source of infinite anxiety to the surgeon. The recollection of these cases in the first year of the war suggested great suffering on the part of the patient: dressings at frequent intervals, drainage tubes, constant operations for the removal of sequestra, and, at the end of months of misery, a weak leg, considerably shortened, possibly with a stiff knee. A very different picture arose from the modern treatment, with bipp applied to the wound, after thorough preliminary investigation and cleaning, suspension on a net bed or a Balkan frame, a well fitted Thomas splint, and early movements of the knee. The evolution of technique for dealing with penetrating wounds of joints was equally striking. In 1918 it was not uncommon to regain a full or almost full range of joint mobility.

A CLINICAL meeting of the Psycho-Neurological Society was held at Lancaster Gate, W., on April 22nd, with Dr. H. E. DAVISON in the chair. The following cases were demonstrated:—Dr. C. WORSTER-DROUGHT: (1) Case of concussion of the spinal cord in the cervical region with Brown-Séquard syndrome and injury to the sixth and seventh left cervical nerve roots. (2) Case of fracture-dislocation of the spine in the lower dorsal region, with partial Brown-Séquard syndrome. (3) Case of proximal myopathy (Landouzy-Dejerine type). (4) Case of aphasia, agraphia, and alexia, with right homonymous hemianopia, in a man aged 30. (5) Case of early tabes dorsalis, with double intention tremor. Dr. DANVERS-ATKINSON: Case of myotonia congenita. Dr. P. BOUSFIELD: Case of motor aphasia and agraphia, due to cerebral haemorrhage, in a young man.

Rebiews.

TWO TYPES OF SMALL-POX.

THE reappearance in this country of fatal small-pox and the outbreaks of "alastrim" which attracted attention in East Anglia give special interest to the hypothesis developed by Dr. JOHN MCVAIL in his Milroy lectures of 1919, reported in our columns at the time. He has now published them in a volume[1] which many will desire to keep on their shelves, for Dr. McVail raised a general question of great significance. He pointed out that in the pre-statistical period the fatality of small-pox varied greatly in different epidemics, and quoted statistics showing that between 1870 and 1895 the fatality declined; the London rate in 1893–94 was less than half that of 1870–72. This decline continued in the provinces, and was noted in the prevalences of the years 1902–5; but in London the fatality rate (Metropolitan Asylums Board hospitals) was much higher in the epidemic of 1901–2 than it had been ten years earlier. In seeking for an explanation of the difference in severity of the types prevalent almost contemporaneously in London and the provinces Dr. McVail utilized the valuable statistics published by the Local Government Board (Dr. Bruce Low) proving the high malignancy of the form of small-pox, which seems to have invaded France in 1900–3 from North Africa, and the evidence of Sir Shirley Murphy that the disease was introduced into London from Paris. On the other hand, the mildness of small-pox in America, and its undoubted introduction into Nottingham from Salt Lake City, to which Dr. Boobbyer called attention in this JOURNAL in 1901, afford an explanation of the provincial experience. Dr. McVail adduces other evidence to the same effect, such as that of the late Dr. Franklin Parsons, who described two outbreaks in one town—an outbreak of a mild type traceable to America and an outbreak of a severe type which came from Paris by way of London.

That we are dealing with types of the same disease, not with a distinction analogous to that between typhoid and paratyphoid, is shown by the fact that vaccination confers protection equally against the mild and severe forms.

Dr. McVail left open the question as to the factors causing the difference. Variations of virulence in zymotics, uncomplicated by the artificial immunization of a community, are well known; the most familiar example is that of scarlet fever. In this latter case the decline of fatality has been general, and might therefore be deemed a secular phenomenon. The instance of small-pox is of special interest because of the coexistence of the types. Are we to explain the greater severity of the African form in terms of local conditions operating upon the human population, or is it a resultant of something directly modifying the *materies morbi*? This is a subject which, as Dr. McVail remarks, needs special research. It would be rash to hazard any opinion, but, if the cause of

[1] *Half a Century of Small-pox and Vaccination.* By John C. McVail, M.D., LL.D. Edinburgh: E. and S. Livingstone. 1919. (Demy 8vo, pp. viii+86. 5s. 6d. net.)

differentiation is a lowered state of bodily resistance, then the appalling conditions now prevailing in large tracts of Europe give grounds for the apprehension that it is not typhus only that will have to be reckoned with in the near future.

RENAL SECRETION AND NEPHRITIS.

THE secretory activity of the kidneys has long been a matter of great interest to physiologists, the more so because the renal secreting cell and its working have often served as the field where philosophical mechanists and vitalists have met in battle. A fairly recent work (see BRITISH MEDICAL JOURNAL, 1917, ii, 620), by Professor Cushny, dealing with the secretion of urine, sets out the view that the renal cells in part enjoy the power of active rather than passive secretory activity. A similar conclusion must be reached after perusal of Professor AMBARD'S treatise on the normal and pathological physiology of the kidneys,[2] although no definite statement on the subject seems to be made in its pages.

In the first half of the book he deals with the physiology of the kidney; the renal elimination of substances, he maintains, may take place in three distinct ways—by "effraction" (a pathological process, as when blood escapes into the renal tubules), by diffusion, and by secretion. Elimination by renal diffusion has been observed and measured in the case of methyl, ethyl, and propyl alcohols, acetone, ethyl acetate, and perhaps chloroform; in other words, these substances escape from the circulating blood into the urine by the mere physical process of diffusion, for their concentration in the two fluids at any given moment is always found to be the same. Elimination by renal secretion implies the collection of some substance from the blood and its concentration in the urine, and is the way in which the kidney most commonly works. Emphasis is laid on the fact that it is able to concentrate all such substances to one and the same isotonic level of concentration, and that this concentration can be shown experimentally to have a maximum value for each which is independent of the presence of other substances that are being excreted in the urine—a relation comparable to Dalton's law of partial pressures in gaseous mixtures. Some of these substances—the chlorine ion and certain salts, glucose, glycerin, and water, for example—are described as "substances with a threshold"; others, like urea, ammonia, iodides, sulphates, methylene blue, and phenol sulphonephthalein, are "substances without a threshold," for their excretion takes place whatever their concentration in the blood stream may be, and is not postponed until this concentration has reached a certain limiting value or "threshold." Compounds with a "threshold" are in general useful to the organism; those without it are of no value to the living cells. Such "thresholds" have very different values for different substances, and have levels variable under changed conditions for any one substance.

The second half of the volume deals with the physiology of the kidneys in different forms of nephritis, and will be found of particular interest to physicians, though less interesting, or even discouraging, to the pathologist. Professor Ambard rejects all histological or pathological classifications of the various types of nephritis as unsatisfactory, offering in their place a classification based on the functional efficiency of the diseased kidneys. Widal speaks of "nephritis with excess of chlorides in the blood," or "with excess of nitrogen in the blood" (azotaemia), or "with hypertension," combining these characteristics if need be. Professor Ambard considers only "nephritis with oedema" and "nephritis with azotaemia." As in the first half of the book, his method is mainly concerned with experimental investigation, and he gives many pages of experimental results and calculations exhibiting different phases of renal activity in patients with nephritis. In nephritis with oedema he finds that substances without a threshold are eliminated with normal constants, but slowly; while in the case of those with a threshold the value of the threshold is raised. With nephritis of azotaemic type the action of the kidneys is highly unsatisfactory, though the thresholds are not raised, but are actually lowered. In mixed nephritis, or nephritis with both oedema and azotaemia, there appears to be a special failure to excrete water. Full directions for the experimental recognition of these three types of nephritis are given, and chapters are devoted to their symptomatology and prognosis. The value and limitations of the lacto-vegetarian diet in nephritis are discussed, and a somewhat half-hearted approval is given to the practical methylene blue test of renal activity.

The book is clearly written and well documented, and affords the careful reader much food for physiological and clinical reflection. It is of particular interest to notice that Professor Ambard writes from Strasbourg University, which was reopened to French students under French direction once again in January, 1919.

[2] *Physiologie normale et pathologique des reins.* Par L. Ambard, Ancien Chef du Laboratoire de Chimie, de la Clinique des Maladies des voies urinaires à l'Hôpital Necker, Professeur à la Faculté de Strasbourg. Deuxième édition. Paris: Masson et Cie. 1920. (Roy. 8vo, pp. 268: 43 figures. Fr. 18 net.)

DIFFICULT LABOUR.

FOR any one other than its original author to revise an admitted medical classic such as *Herman's Difficult Labour*[3] may appear to some to savour of an attempt "to gild refined gold, to paint the lily." And in the case of a writer whose work bears so strongly the stamp of individuality, both in its substance and in its method of presentment, the difficulties of the reviser must have been extreme. But if a classic, Herman's work is a modern classic, and it is also a very practical working handbook, so that, far from committing a sacrilege, Mr. CARLTON OLDFIELD and the publishers have done the profession a distinct service in bringing the book up to date. It would have been regrettable if by the neglect of modern advances in obstetric treatment the advice of this friend in need to many a practitioner had been allowed to become of less value.

Mr. Oldfield has very wisely abstained as far as possible from making textual alterations, and such as he has made consist for the most part of the deletion of matter which has become obsolete, and the addition of new. The latter deals mainly with treatment, and in particular with the widening indications for Caesarean section in contracted pelvis and in ante-partum haemorrhage. Several excellent figures have been added also. Distinctly modern notes are struck in the description of the treatment of rupture of the uterus, in which the use of Carrel's tubes is advocated, and in the reference to such a transient cause of accidental haemorrhage—or so one would hope—as T.N.T. poisoning. But these are merely minor criticisms.

The substance of the book is so well known as to need no discussion here. Suffice it that the work of revision seems to have been both skilfully and delicately done. The temptation to add too much recent matter, some of which has perhaps not yet fully emerged from the zone of controversy, must have been hard to resist, but Mr. Oldfield has kept ever clearly before him the special nature of the material upon which he was working, and has performed his task with praiseworthy conservatism and discretion.

A TEXTBOOK OF OPHTHALMIC OPERATIONS.

THIRTEEN years have passed since the issue of the first edition of GRIMSDALE and BREWERTON'S *Textbook of Ophthalmic Operations*.[4] During this time the operative treatment of glaucoma has undergone important modifications, and for this reason, if for no other, we welcome the appearance of the second edition, which contains about 100 more pages than its predecessor; the use of a slightly thinner paper has prevented any material increase in its bulk.

New chapters have been added on diseases of the conjunctiva and on intraocular and intraorbital foreign bodies, while the chapter on glaucoma has been rewritten; the general plan of the work, however, remains the same, the authors' object being to give the reader an outline of the operations which can be performed for any particular condition, so that he may make his own choice and adapt them to his own needs.

Although the chapter on the conjunctiva is new, its

[3] *Herman's Difficult Labour.* Revised and enlarged by Carlton Oldfield, M.D.Lond., F.R.C.S.Eng. London: Cassell and Co., Ltd. 1920. (Cr. 8vo, pp. xii + 573; 198 figures. 16s. net.)

[4] *A Textbook of Ophthalmic Operations.* By Harold B. Grimsdale, M.B., F.R.C.S., and E. Brewerton, F.R.C.S. Second edition. London: Baillière, Tindall, and Cox. 1920. (Demy 8vo, pp. viii + 438; 129 figures. 18s. net.)

contents were for the most part contained in the first edition, arranged under the section on the lids; the new arrangement is certainly an improvement.

This work, the only one of its kind on this special subject in our language, is a most valuable one, and reflects the greatest credit on its authors. No ophthalmic surgeon in this country can, we are confident, afford to be without it. The illustrations are largely diagrammatic, the authors holding that a good diagram is preferable to photographic representation of an ophthalmic operation, an opinion which will be shared by most ophthalmic surgeons. A word of praise is due for the very complete index.

HOUSE-FLIES.

THE latest number of the Economic Series of pamphlets published by the Natural History Museum is entitled *The House-fly: its Life-History and Practical Measures for its Suppression.*[5] Like the previous pamphlet of the same series on *The House-fly as a Danger to Health*, it is from the pen of Major E. E. AUSTEN, D.S.O., Assistant in the Department of Entomology. The objects of both publications are much the same; but Major Austen here draws on his experience on three fronts during the late war, and takes into consideration the requirements of the army as well as of the civil population. He gives a clear account of the distinctive characteristics of the house-fly and of certain other flies often mistaken for it, and then narrates the life-history of the house-fly. The question, What becomes of the house-fly in winter in the British Isles and North America? still remains unanswered, for the French naturalist's announcement at the end of last year that he had discovered house fly larvae in live snails in winter has not yet been confirmed in England.

In the section on house-flies and disease Major Austen sets out lucidly the reasons for regarding these insects as a serious menace to health. "There can be no doubt whatever," he adds, "that it is by far the most important of British insects from the standpoint of public hygiene. . . . It is therefore the bounden duty of everyone, by the employment of all possible means, to assist in protecting the community from the perils inseparable from the presence of these living vehicles of infection." Regarding preventive measures and remedies, he lays down two rules of universal application:

1. It is far better to prevent house-flies from breeding than to permit them to breed unchecked, and then endeavour to kill the resultant broods after they have invaded houses or other habitations.
2. No system of sanitary control can be regarded as efficient which allows house-flies to have access to material containing, or possibly containing, the germs of disease.

Before giving an outline of the most practical methods of checking the breeding of house-flies in horse-manure, household or kitchen refuse, and human faeces, he states emphatically that chloride of lime is utterly useless in any material whatever. The pamphlet closes with a short account of the best methods of dealing with flies which develop in spite of all precautions, or which negligence or ignorance have allowed to come into being. Of these methods preference appears to be given to formalin, and it seems worth while to note the author's statement that in the hygiene department of the Royal Army Medical College, Millbank, it was found that a solution of formalin in water soon becomes acid and consequently unattractive to flies. The best way of using formalin is stated to be to mix two teaspoonfuls of commercial formalin (40 per cent.), two heaped tablespoonfuls of sugar, and lime-water to make a pint. This mixture can either be exposed in soup plates having in the centre of each a cube of bread on which the insects may settle, or on pads of lint or cotton-wool in shallow trays, or it may be placed in closed tins with perforated lids through which are passed wicks having their lower end dipping into the fluid. It is stated that the formalin generally works best in the early morning, when, in kitchens, dining-rooms and offices, it is possible to ensure that no other source of refreshment is accesible to the flies.

The illustrative plates and figures in the text are clear and helpful, and Major Austen and the trustees of the British Museum deserve the thanks of the community for producing this useful little work in time for its lessons to be applied during the coming summer.

NOTES ON BOOKS.

Legal Chemistry and Scientific Criminal Investigation,[6] by Mr. LUCAS of Cairo, is a book dealing with work in Egypt and the East, and consists of notes on all sorts of questions arising in the course of criminal investigations in which a knowledge of chemistry may prove of service in the tracking of crime and the administration of justice. The chemical expert must have a detailed and various knowledge of materials of every kind—alcoholic beverages, antiquities, blood stains, building materials, bullets, clothing, counterfeit coin, crops, documents, dust and dirt, and so on through the alphabet. A great deal of useful information and detailed advice will be found on the chemical, medical, and legal bearings of all these matters. The book should be of great service to coroners, medical experts, and chemists who deal with the detection of crime, particularly if their work lies in the East.

In the volume *Child Welfare*,[7] in which Dr. SIM WALLACE has collected a number of essays most of which have been previously published in medical or dental journals, he claims to set forth the modern views with regard to oral hygiene. In the first chapter, on prophylaxis at different ages, he emphasizes the following points: (1) Mouth breathing must not be induced by allowing the infant to breathe unduly cold and damp air. On this account the practice of allowing the infant to sleep in an unwarmed room with the windows open is strongly condemned. (2) Gnawing must not be prevented by withholding suitable articles, or, later, foods which may be gnawed and sucked. (3) Cleanliness of the food must be secured, otherwise unhygienic states of the mouth and alimentary canal are likely to be produced and the nutrition of the infant interfered with. In a chapter on the principles of dietetics he insists on the importance of the meals being of such a nature that they will leave the mouth physiologically clean. Such forms of food as jam rolls, bread and marmalade, are to be condemned as the last course of a meal, their effect being the opposite of fruit, which leaves the mouth in a hygienic state. In discussing the duty of the State towards the child, it is urged that oral hygiene should be regarded as a vital part of the curriculum for a diploma in public health or state medicine. Dr. Sim Wallace's book, if at times too diffuse and polemical, may nevertheless be recommended to those who are interested in child welfare and dietetics.

When lecturing on sanitation in Macedonia during the war to the officers of his battalion, Captain P. WOOD was struck by the importance of *Moses, the Founder of Preventive Medicine*,[8] which is the title of a well written little volume published by the Society for Promoting Christian Knowledge. He finds that scattered through the Mosaic code there are many fragments which, when gathered together, form a fairly complete system of preventive medicine, which was lost sight of for thousands of years and has suffered the fate of anachronisms by not being understood. In an introductory chapter the training of Moses is described; the ten plagues of Egypt are then shown to provide useful lessons on defective sanitation and an introduction to the succeeding chapters on hygienic legislation, the control of infectious diseases, and diet. In connexion with the credit ascribed to Moses, the more modern views as to authorship of the Pentateuch, or the first five books of the Old Testament, traditionally considered to be written by Moses, should be borne in mind; for though Moses gave certain laws to the Israelites, it is highly uncritical to regard him as responsible for all the laws; it has been shown that some of them cannot be earlier than 440 B.C., or about 800 years after Moses.

[5] *The House-fly: its Life-History and Practical Measures for its Suppression.* By Major E. E. Austen, D.S.O. British Museum (Natural History) Economic Series, No. 1A. Sold at the British Museum, and by B. Quaritch, Ltd., and Dulau and Co., Ltd. (Demy 8vo, pp. 52; 11 figures. 1s. 6d. net.)

[6] *Legal Chemistry and Scientific Criminal Investigation.* By A. Lucas, F.I.C., Director Government Analytical Laboratory and Assay Office, Cairo, etc. London: Edward Arnold. 1920. (Demy 8vo, pp. viii + 181. 10s. 6d. net.)

[7] *Child Welfare and the Teachings of Certain Dentists, School Medical Officers, Medical Officers of Health, and other Medical Men.* By J. Sim Wallace, D.Sc., M.D., L.D.S. London: Baillière, Tindall, and Cox. 1919. (Demy 8vo, pp. x+102. 5s. net.)

[8] *Moses, the Founder of Preventive Medicine.* By Percival Wood, M.R.C.S., L.R.C.P., Captain R.A.M.C. London: Society for Promoting Christian Knowledge. 1920. (Cr. 8vo, pp. xi + 116. 4s. net.)

UNIVERSITY GRANTS.

THE total estimate for parliamentary grants in aid of the expenses of universities, colleges, medical schools, etc., in the United Kingdom for the year 1920–21 is £1,000,000, an amount which includes unallocated grants amounting to £210,500; the amount unallocated compares with £531,500 unallocated in 1919–20.

The following are the amounts of the grants made; the first column shows the amounts, if any, last year and the second column the amounts this year:

ENGLAND.	1919–20.	1920–21.
Universities.	£	£
Birmingham	2,000	35,000
Bristol	2,000	17,000
Durham	2,000	2,000
Leeds	2,000	33 000
Liverpool	2,000	40,000
London	8,000	8,000
Manchester	2,000	40,000
Sheffield	2,000	21,000
Medical Schools.		
Charing Cross Hospital		1,000
King's College Hospital		700
London Hospital		6,000
Middlesex Hospital		2,000
Royal Dental Hospital School of Dental Surgery		1,000
London (Royal Free Hospital) School of Medicine for Women		4,000
St. Bartholomew's Hospital		5,000
St. George's Hospital		700
St. Mary's Hospital		1,900
St. Thomas's Hospital		4,500
London School of Tropical Medicine		1,100
University College Hospital Medical School		4,000
Westminster Hospital Medical School		300
Cambridge University, Medical Department		8,500
Durham College of Medicine		3,800
Colleges.		
Durham, Armstrong College		22,000
Bedford College		13,000
East London College		11,000
Imperial College of Science and Technology	32,000	52,000
London, University College		39,000
Nottingham, University College		11,000
Reading, University College		12,000
Southampton, University College		5,000

WALES.	1919–20.	1920–21.
	£	£
University of Wales	6,500	6,500
Aberystwith, University College	9,125	14,000
Bangor, University College	9,125	14,000
Cardiff, University College	11,750	18,000

SCOTLAND.		
Edinburgh University	27,620	53,000
Glasgow University	24,680	48,000
Glasgow Royal Technical College		3,000
Aberdeen University	17,400	32,000
St. Andrews University, including Dundee University College	14,300	29,000

IRELAND.		
Belfast, Queen's University	18,000	26,000
Dublin, National University of Ireland	1,000	2,000
Dublin, University College	32,000	42,000
Cork, University College	20,000	26,000
Galway, University College	14,000	17,000

ROYAL MEDICAL BENEVOLENT FUND.

AT the last meeting of the Committee, held on April 13th, 27 cases were considered and £374 9s. voted to 24 of the applicants. The following is a summary of some of the cases relieved:

Widow, aged 34, of M.B.Edin. who died in December, 1919. Her only income is £30 from investments, and she has a child aged 4 months, which at present she cannot leave to earn her own living. Pays £2 2s. a week for board and lodging. Voted £18 in two instalments.

Widow, aged 38, of M.R.C.S.Eng. who died in February, 1920. Was left with four children, aged 4 to 1 year, and has no income whatever. At present the guardians are allowing her to live in the resident medical officer's house, where she lived previously. Voted £18 in two instalments.

Daughter, aged 60, of M.R.C.S.Eng. who died in 1873. She has no income, and lives with her sister, who lets rooms. Suffers from chronic rheumatism. Relieved thirty-five times, £290. Voted £18 in twelve instalments.

Daughter, aged 58, of M.R.C.S.Eng. who died in 1892. Was left totally unprovided for, and her only income is £21 from another charity. Pays 7s. 6d. a week rent. Is in ill health and cannot manage owing to the high cost of living. Relieved nine times, £117. Voted £18 in twelve instalments.

Widow, aged 58, of M.R.C.S.Eng. who died in 1914. Was left entirely without means, with one daughter, now aged 26, who is a children's nurse. Applicant has been earning £30 a year as a housekeeper, but is now ill and out of employment. Relieved seven times, £61. Voted £18 in twelve instalments.

M.R.C.S.Eng., aged 83, widower, whose only income is a pension of £100. Suffers from ill health. Has one daughter, who looks after him. Rent and rates £39, part of which is paid by friends. Relieved once, £25. Voted £26 in twelve instalments.

Daughter, aged 52, of M.R.C.S.Eng. who died in 1873. Has taken charge of a mental case for fourteen years, for which she receives £1 a week. Rent and rates £16 a year. The high cost of living makes it impossible for her to manage. Relieved eight times, £93. Voted £18 in twelve instalments.

Subscriptions may be sent to the Honorary Treasurer, Sir Charters Symonds, at 11, Chandos Street, Cavendish Square, London, W.1.

The Royal Medical Benevolent Fund Guild is overwhelmed, in these days of exorbitant prices for clothing and household necessaries, with applications for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys. The Guild appeals for second-hand clothes and household articles for the benefit of the widows and children who, in happier times, would not have needed assistance. The gifts should be sent to the Secretary of the Guild, 43, Bolsover Street, W.1.

MEDICAL EXAMINATION OF CIVILIAN AVIATORS.

THE Department of Civil Aviation of the Air Ministry has issued a pamphlet on the medical examination of airmen,* prepared by Lieut.-Colonel C. B. Heald, C.B.E., medical adviser to the department. It is described as an explanation of the methods and standards now in use in England for the examination of applicants for licences as civilian aviators.

The international medical requirements for air navigation, as laid down by the Convention relating to International Air Navigation, 1919, are indicated. The standard of fitness is prescribed by the Convention in general terms; one clause states that "Each contracting State shall for the present fix its own method of examination until the detail of tests and the minimum standard of requirements have been finally settled by the authorized medical representatives of the International Commission for Air Navigation." Re-examination is required at least every six months and after sickness or accident.

In the introduction to the pamphlet it is stated that the accurate estimation of physical and mental efficiency as regards flying is in its infancy, and that while the pamphlet is intended to serve as a general guide, the final word must be left to medical judgement and common sense.

In describing the methods of examination concise guidance is given as to the important matters of family and personal history, and the particular diseases and injuries to which special attention should be paid are set out. The notes on the rest of the examination are classified under "General Medical," "General Surgical," with special sections on the investigation of the condition of eyes, ears, nose, and the throat. A specimen form for recording the results of the examination is given, and a list of the apparatus required is illustrated by photographs and drawings. Finally, there is a list of references to British, American, French, and Italian publications.

The arrangement of the pamphlet is excellent, and, while the amount of information given might easily fill a book three or four times as large, the subject matter has, on the whole, been expressed so clearly and concisely that examining medical officers should find the explanations quite sufficient for practical guidance.

The general impression conveyed is that the examination of the civil aviator is divided into two parts—one a careful general surgical and medical "overhaul," and the other the application of special flying tests. Great stress is laid on the point that these special tests are merely

**The Medical Examination of Civilian Pilots, Navigators, and Engineers.* H.M. Stationery Office. Through any bookseller, price 6d.

adjuncts to the general clinical and temperamental examinations. This attitude is much to be commended in view of the short time many of these special tests have been in use and the consequent lack of experience of their true value. At the same time, in a summary of the general examination, it is stated that the special tests have been so consistently satisfactory that high minimum responses can be safely demanded. A short table is given of minimum standards for some of the special tests. Among these is a test for "expiratory force," as shown by readings on a U tube manometer, and it is stated that when the expiratory force is under 80 mm. of Hg "it suggests that the subject will probably be incapable of sustained effort in routine aërial work." It is difficult to imagine exactly what this test is intended to represent. An expiratory force of 80 mm. Hg is extremely low and the subject would probably be rejected on more obvious grounds.

It is interesting to note that the methods of body measurements advocated by Professor Dreyer have been adopted. They are likely to prove of great value, not only as representing the actual state of fitness of the subject at the moment, but as providing coefficients, deviation from which at subsequent examinations will at once draw attention to improved or impaired condition.

During the war it was recognized in this country that experience and ability in various forms of sport were valuable to the flying man. With reference to special mental tests such as reaction-time tests, to which the Italians and others have paid special attention, the following sentence is deserving of quotation: "The British have not adopted these special tests to any large extent, because they have felt that a history of aptitude at various sports requiring eye is of equal value, as compared with a somewhat elaborate experiment carried out on a special occasion under circumstances frequently trying to the applicant." This attitude is extremely wise in that it encourages a careful weighing up of the aviator's temperament, and recognizes the value of his previous training and education. Psychological tests as applied to the aviator are so much in their infancy that at present they should be left rather to the laboratory than to the examining medical officer. There is little doubt, however, that electrically recorded psychological tests will before long be included in the examination of the civil aviator.

For practical purposes this medical examination is long and elaborate, yet the data to be acquired by such an examination will be of the greatest value from the research point of view.

The Civil Aviation Branch of the Air Ministry is to be congratulated on a medical service which can produce so excellent a guide to the medical examination of civilian aviators; it may well serve as a model when the international tests are decided on by the medical representatives of the International Commission for Air Navigation.

THE BUDGET.

MR. AUSTEN CHAMBERLAIN, in his Budget speech, pointed out that in general the position with regard to the past year's accounts was substantially better than had been suggested in his forecast last October. For instance, customs and excise gave an increase of £7,000,000 over what was then anticipated, and he drew the conclusion that, in the case of tea and tobacco at least, "it reflected an increased consumption and therefore an increased spending power in the mass of our people"—a conclusion not without interest in these days of rising wages. Incidentally he also attributed the increased yield of the tobacco duties in part to "the growth of the habit of smoking among women." The figures for the total debt were sufficiently alarming; the total dead-weight debt he put at £7,835,000,000, the floating debt being £1,312,205,000; the latter had been reduced by £100,000,000 during 1919–20, though the month of April was disappointing in that connexion. The Chancellor announced that the Government had decided that in future there should be no more borrowings to balance revenue and expenditure, but as further capital would still be required for local and national purposes the issue of Savings Certificates would be continued, and it was hoped that this would foster a spirit of thrift. The existing taxes apart from the new proposals were estimated to produce a revenue of £1,341,650,000, against an expenditure of £1,177,452,000, and would leave £164,000,000 for the reduction of debt; but the Government did not consider that sufficient, and he proposed further taxation, the result of which would be to produce a surplus of £234,198,000 for that purpose.

Mr. Austen Chamberlain stated that the amount of the anticipated surplus was such that its maintenance for twenty years would pay off the whole war debt, but added later that he did not contemplate that the country would continue to make the abnormal sacrifices that such a course would necessitate.

The proposals taken in detail provide for the following new or additional duties, in addition to the changes in motor taxation which were fully stated in our last issue:

The *Land Values Duties* are to be repealed, but the existing staff will apparently be retained for other purposes, such as for rating or death duty valuations.

Spirits and Beer and Wines.—On spirits the duties are increased from 50s. to 72s. 6d. the proof gallon and on beer from 70s. to 100s. the standard barrel respectively, the retail prices to be fixed by the Food Controller in such a way as to divide the burden between the manufacturer and the retailer. The duty on wines generally is doubled, being raised for light wines from 1s. 3d. to 2s. 6d. a gallon, subject to a rebate of 40 per cent. from countries entitled to preferential rate. The duty on stronger wines will be raised from 3s. to 6s., with 6d. extra for every degree beyond 42°, but this is subject to a rebate of one-third for wines from countries entitled to preferential treatment. There is an additional duty on still wine imported in bottle of 2s. in place of 1s., and on sparkling wine of 5s. in place of 2s. 6d., *plus* 50 per cent. *ad valorem*, but these charges are subject to rebates as in the case of wine in cask.

Cigars came in for special treatment, and are to bear an additional duty—50 per cent. *ad valorem*.

Stamp Duties.—It is proposed to double the "receipts" duty and to increase the stamp duties on transfers of stocks and on the registration of new limited companies.

Post Office Charges.—Mr. Chamberlain stated that the net surplus revenue from the Post Office of £6,500,000 before the war had been converted into a deficit of £11,000,000. He proposed increased charges estimated to produce £6,500,000 this year; he stated further that proposals for the increase of telephone rates would be laid before a Select Committee, and took power to increase the rates for inland postcards (to 1½d.) and for printed papers proportionately, as soon as the international rate can be raised, the date depending upon the decision of the International Congress which is to meet in Madrid in the autumn.

Inland letter rates are to be raised to 2d. for every 3 oz., with ½d. for every additional ounce. The charge for letters to British possessions and the United States of America will be raised to 2d. for 1 oz., with 1d. for every additional ounce. The inland charge for a copy of a registered newspaper not exceeding 6 oz. in weight is ½d., it is to be raised to 1d., with, as now, ½d. for every additional 6 oz. Inland parcel rates will be raised from 6d. for 3 lb. to 9d. for 2 lb., with similar increases for heavier weights. Inland telegrams are to be increased from 9d. for twelve words, with ½d. for every additional word, to 1s. for twelve words, with 1d. for every additional word. Telegrams handed in on Sunday will be subject to an additional charge of 6d., and porterage is raised from 3d. to 6d. a mile from the limit of free delivery. The charges on inland money orders and postal orders are also to be increased. Before the increases come into effect due notice will be given.

Income Tax.—The administrative questions dealt with in the Report of the Royal Commission on Income Tax are postponed for consideration later in the year, while the changes suggested in the method of graduating the tax are to be put in operation. These changes were dealt with in an article in our issue of March 27th (p. 441), and it is sufficient to say here that the earned income is reduced by 10 per cent. and the various allowances are for wife, £100, formerly £50; children, £40 and £30, in lieu of the existing £40 and £25; dependent relatives and housekeeper are deducted from the total to arrive at the "assessable" income, of which £225 is chargeable at one-half and the balance at the full standard rate of 6s. Supertax is to begin at the £2,000 limit, instead of at £2,500, and the rates are increased. Broadly, the effect will be to relieve the middle class and the taxpayer with family responsibilities. It will be realized that this very complete change in the method of steepening the effective rate of tax as the total income rises will ultimately simplify the individual taxpayer's assessments, though the transition from one method to another will inevitably cause some confusion. The three years' average basis of assessment of profits is to be retained for the present.

The *Excess Profits Duty*, which had in many quarters been regarded as marked out for extinction, is to be raised to 60 per cent. as from January 1st, 1920, with the proviso that the additional 20 per cent. may be foregone if a war levy on capital is raised.

The *Corporation Tax* is a new feature of our fiscal system, and is probably destined to supersede in due course the excess profits duty. It is to take the form of a special tax on the trade profits of limited liability companies, levied at 1s. in the £ on the company's profits, after deduction is made for any excess profits duty that may be payable. In a full year, and when unrestricted by the simultaneous operation of excess profits duty, this tax is estimated to produce £50,000,000.

British Medical Journal.

SATURDAY, MAY 1ST, 1920.

THE BUDGET.

WE described the Budget of last year as a transition Budget; the present Budget is the first step in the direction of debt reduction. Last week we dealt with some of the points which most directly concern the medical profession, but it appears desirable to take a general view in order to get the various matters into proper proportion.

With regard to debt reduction it was hoped by many financial experts that the Chancellor would cease to regard the sale of stocks of munitions and similar war purchases as ordinary Exchequer receipts, and would earmark them in future for the repayment of loans with which such stocks were bought. Mr. Chamberlain justified his failure to fulfil these expectations by showing a surplus on the estimated revenue for the forthcoming year, which is to be used for payment of debt; he spoke of it as a matter of book-keeping, but the net result is that whereas the sales are expected this year to yield 202 millions, the present estimate for the redemption of debt is 234 millions.

The Chancellor's attitude on the question of the excess profits duty came as a complete surprise. The general expectation was that that duty—which was reduced under the previous Budget from 80 per cent. to 40 per cent. as from January 1st, 1919—would be completely discarded and in its place some other tax would be introduced to make good the resulting revenue deficiency in part, if not entirely. In this connexion a new tax on the business profits of limited liability companies had been thought probable, and the surmise proved correct; what was not expected, however, was that this new tax is to run concurrently with the excess profits duty; and, to the further confusion of "intelligent anticipations," that duty is not only to be maintained, but even to be increased to 60 per cent. as from January 1st, 1920, though the Chancellor did hold out some hope that the additional 20 per cent. might be foregone if a workable scheme for a capital levy on war fortunes could be evolved in time for it to be put into operation this year.

It is due to the Chancellor to say that the Budget has clearly been framed without fear either of his friends or his opponents; the outstanding need of the moment is the repayment of debt, and the proposals which have been laid before Parliament are conceived with the courage and perception of financial conditions which are essential if that need is to be met. Memories are short and commercial prosperity is periodic; the recognition of these facts has evidently braced the Chancellor, and indeed the House of Commons as a whole, to face the financial demands of the moment boldly and successfully. The magnitude of these demands are as striking as their urgency. The Budgets of to-day reach figures undreamt of by our forefathers, and we believe that the Government has correctly located the only source from which the Exchequer can draw the income necessary to put the national accounts on a better footing. Mr. Chamberlain frankly admitted that he fell into the general error in supposing that the signing of the Armistice and the consequent suspension or cessation of munition work would usher in a not inconsiderable period of industrial and commercial difficulty before the transition to peace-time activity could be achieved; "the excess profits assessed during the year," however, "showed an upward trend," proving that the dislocation of industry was much less than had been feared. With income tax at its present levels, we have no hesitation in saying that there is only one quarter in which the Chancellor can have any hope of finding the capacity to bear the additional taxation necessary for the repayment of debt, and that is in the world of business, and more particularly in the world of "big business." That the Chancellor appreciates the truth of that reading of the position is evidenced by the maintenance or increase of the excess profits duty, coupled, as it now is, with the special tax on the business profits of limited liability companies—the Corporation Tax, as it is to be called. Whether any scheme for the special taxation of war fortunes will ever achieve fruition is open to very grave doubt, but in the meantime it is a matter for congratulation that the big burden is being placed on the broad shoulder.

There is one feature of the income tax proposals as to which we entertain a good deal of doubt, and that is as to whether the proposed rebate of 10 per cent. in favour of earned incomes is sufficient. On the 1919–20 scale the taxpayer whose total income did not exceed £1,000 received a rebate of 20 per cent., and if it did not exceed £1,500 then 17½ per cent., and so on. What is really wanted is a system under which a taxpayer's own savings should be differentiated from inherited funds; if that is impossible we are thrown back on a discrimination between earned or precarious as against unearned or investment incomes, inasmuch as the former class of income implies the duty of saving to a greater extent than the latter. It must be freely admitted that in this, as in many other fiscal questions, the interaction of other taxes must not be overlooked; the source of investment incomes ultimately bears a death duty taxation from which earnings are free, and an increase in death duties logically implies a lowering of the advantage given to them in the matter of the income tax. But that notwithstanding, it is only to be supposed that many "earners" will feel some sense of grievance in seeing their differential advantage reduced from 20 per cent. or 17½ per cent. to 10 per cent.

Another additional charge levied in the form of increased duties on the transfer of stocks and shares will affect many medical men, more particularly, perhaps, those who are making provision for their dependants by accumulating and investing such savings as may be possible under present conditions of expenditure. The duties, even on their revised basis, would be small as compared with the amount of capital invested, so that their deterrent effect would probably not be great in the case of genuine investment, but might come into operation where shares are bought and sold with any degree of frequency. It is to be hoped that the Chancellor is not relying too much on this aspect of the matter to justify the increased levy. The existing taxes are already sufficient to discourage saving in many cases, and any further deterrent, however slight, may operate in such circumstances with surprising results.

We referred last week to the new motor-car taxation to be put into force at the beginning of 1921, and pointed out that in this matter the medical profession is being harshly treated. The profession need feel no false modesty in pressing its claim to fair treatment, for its patriotism is indubitable and the weight of

taxation is such that no addition to its due proportion can be carried without great hardship. It is proposed to put the new motor tax into operation as from January 1st, 1921. The proposals differentiate between different kinds of vehicles, the classifications being framed so as to give preferential treatment on the basis of units of weight to, *inter alia*, "vehicles used for the conveyance of goods," and the White Paper states "the abatement of duty granted in the case of motor cars used by medical practitioners or veterinary surgeons will cease." The legislature has repeatedly admitted that such cars are in a different position from cars used for pleasure, and we find it hard to believe that it will now reverse that view. We submit that, if the intention is that the tax should ultimately be borne by the practitioner, it is unfair; and if it is to be borne by his patient, through the operation of increased fees, it is clumsy; and, further, that any fiscal impediment to the purchase of the speediest means of locomotion is in the case of a medical practitioner impolitic on public grounds. We suggest very strongly that equity demands the grant of some substantial rebate from the proposed tax on the lines of that granted in the tax which it is to supersede. The steps already taken by the British Medical Association were stated last week (p. 576), and the Association's further action is recorded in a Current Note in the SUPPLEMENT this week.

An aspect of the national finances that is rightly receiving attention is the cause of the national expenditure, as well as the methods by which it is to be met. It must be admitted that in this connexion the Chancellor's position is extremely difficult. When the sums to be raised by taxation were smaller, and taxation was less intricate and burdensome, he might reasonably be expected to act as a watchdog to prevent the intrusion of extravagance; to-day the dual rôle is perhaps more than any one man can fill, for economy in expenditure can be effected only by close and almost daily criticism of the proposals, not only of members in the House of Commons, but also of the State departments, and even then that criticism must be backed by detailed knowledge and a power of veto that no single individual would desire to possess or be able to exercise properly. A committee system in the all-important field of finance is not congenial to the British genius, but we seem to be approaching a point at which that will have to be tried if the present system fails to retain public confidence in its power to achieve a proper standard of economy in administration.

THE DECLINING BIRTH RATE.

WE publish elsewhere a summary of the paper read to the Royal Statistical Society on April 20th by Dr. T. H. C. Stevenson, Superintendent of Statistics in the General Register Office. The most striking result brought out by the tabulation of the census returns is the decline of fertility in the middle and upper classes. In Dr. Stevenson's words: "We were already well aware that the more successful and prosperous classes were behindhand in their contribution to the upkeep of the nation; but it was possible to suppose that this might long have been the case, and that, therefore, experience had proved it to be compatible with such prosperity and advancement as had been achieved. Now, however, this comforting view is no longer tenable. In the deficient fertility of the classes which, having achieved most success in life, are presumably best endowed with the qualifications for its achievement, we see that we have to face a new and formidable fact—how formidable is a question which must be left for the consideration of authorities on eugenics."

It is not unnatural that Dr. Stevenson, the custodian of our national statistics, should deem a proposition unproven until it has been put to the test of census machinery. For ourselves, we should prefer to speak of his results as a verification of what Professor Karl Pearson and his pupils, particularly Dr. David Heron, had rendered highly probable more than ten years ago. Much as we are indebted to official vital statisticians in connexion with this subject, our debt to the late Sir Francis Galton and to his most brilliant disciple, Professor Karl Pearson, is far greater. To Professor Pearson we owe both the best means of making statistical discoveries, and discoveries themselves which the fuller records of the national census confirm. Most can raise the flower now for all have got the seed; the smart of wounds received in ephemeral controversies—and medical men have not come within range of the biometric artillery without some injury—ought not to diminish our gratitude to the Galton Professor of National Eugenics, or to prevent us from congratulating him on the official adhesion to his main doctrine which such words as those of Dr. Stevenson convey.

Are we to infer from these results that, unless the middle and upper classes can be induced to make a larger proportional contribution to the rising generation, national decay is certain? Upon this there is room for difference of opinion. We should suppose that, if prosperity depends upon fulfilment of the proviso, the future is gloomy. Financial encouragements of parenthood amongst the middle and upper classes so large as to be calculated to have a sensible influence are not very likely to find favour in any form of state now existing. Most of the detailed proposals we have seen bear a strong family resemblance to the advice tendered annually to the Chancellor of the Exchequer in the matter of taxing cats; again, historians tell us that the *Jus trium liberorum* never had the desired effect. On the other hand, while it does seem probable that the absolute fecundity of the very poor and miserable can and will be reduced, there are likely to remain vast numbers of persons who will not place even the restraint upon their sexual impulses which the use of contraceptives involves.

Perhaps a gleam of hope is afforded by the consideration that social selection is not infallible, and that the fittest may not be the best. The obvious argument is that nearly all persons struggle to pass out of the social group in which they are born, that those who succeed are the best members of their class, usually also the least fertile, and that on attaining promotion their fertility is still further reduced. It is, however, possible that there is a flaw in the reasoning. It may be that those who are socially and economically failures, inasmuch as they do not secure class promotion, may be, intellectually and morally, better citizens than the successes. Within the circle of middle and upper class occupations there is not a perfect correlation between the social or economic prestige of a profession and the average intellectual endowments of its members. Perhaps the qualities which lead to effective greatness in the world are much more specialized than has been assumed, and comfort may be drawn from *The Admirable Crichton* of Sir J. M. Barrie.

It is at least certain that, during the war, capacity for social service was discovered in unexpected quarters. But even if this be admitted, it only amounts to saying that disaster is not so imminent as

an extreme pessimist would suppose. If any criterion of success—the imperfect one of worldly prosperity, which we now employ, or some better one yet to be devised—is in practice always correlated with relative sterility, ultimate national decadence would seem to be assured.

SECTIONS AT THE CAMBRIDGE MEETING.

ARRANGEMENTS have now been made for the discussions and demonstrations in the Section of Venereal Diseases at the annual meeting of the British Medical Association at Cambridge this summer. This Section will meet on Thursday, July 1st, under the presidency of Mr. E. B. Turner, F.R.C.S. The three morning hours will be confined to the subject of venereal diseases in women and children, and discussion will be based on two papers: (1) The treatment of venereal disease in women, by Dr. Morna Rawlins, surgeon for venereal diseases to the New Hospital for Women and gynaecologist to the Female Lock Hospital; (2) Venereal diseases in children, by Dr. Leonard Findlay, physician to the Hospital for Sick Children, Glasgow, and lecturer on diseases of infancy and childhood in the University of Glasgow. In the afternoon there will be a clinical demonstration at the Venereal Diseases Clinic, Addenbrooke's Hospital, and a laboratory demonstration, under the direction of Professor Bernard, in the medical schools. It is hoped to show models of a standard type of clinic, made from an army hut according to the design of Colonel L. W. Harrison. The honorary secretaries of the Section are Dr. W. H. Harvey and Dr. Otto May. The Section of Obstetrics and Gynaecology will meet on Wednesday, June 30th, when the main topic for discussion will be puerperal sepsis. Mr. Victor Bonney (London) will contribute the opening paper on the prevention and treatment of puerperal sepsis. Mr. H. Beckwith Whitehouse (Birmingham) will deal with the surgical treatment of the uterus in puerperal sepsis; Dr. A. E. Gow (London) with intravenous protein therapy in the treatment of puerperal septicaemia; and Dr. Leith Murray (Liverpool) with the use of serums and vaccines in puerperal sepsis. It is proposed to hold a joint session with the Electro-Therapeutics Section to discuss the treatment of fibroids by *x* rays. During the meeting Dr. R. Mackenzie Wallace will give a demonstration of the diastase reaction. The president of the Section is Dr. Herbert Williamson, and the secretaries are Dr. Malcolm Donaldson and Dr. W. R. Grove. Particulars regarding accommodation for visitors at Cambridge, and other matters, are printed in an inset to the SUPPLEMENT this week.

GOVERNMENT POLICY AS TO MUNICIPAL GENERAL HOSPITALS.

OUR lobby correspondent writes that while Dr. Addison is unlikely to go further in statement of policy as to the establishment of municipal hospitals than he did in answer to a question by Mr. Lyle, reported in the BRITISH MEDICAL JOURNAL of April 24th, p. 583, it is understood that he intends to act fully up to what he then said. He intimated that he had given his sanction to the establishment of a municipal hospital at Bradford because it seemed to him the only practicable method of providing the institutional accommodation needed by the city, and that pending further legislation, which was now being prepared, he would consider cases on their merits as they arose. It was open to Dr. Addison to have said that for the time being he would more or less limit his sanction to the cases of localities where fresh population had accumulated and was without institutional service except at a considerable distance. Clearly, however, having made the Bradford precedent, he is prepared to consider appeals where existing accommodation in large towns is not equal to the urgent demands of the population as a whole, and he may be willing, in such applications, to sanction the setting up of municipal hospitals, possibly to serve in a secondary capacity—that is, to relieve the voluntary hospitals of cases of minor importance which do not require their high equipment. Indeed the Medical Consultative Council is said to favour such a course, but it does not appear that sufficient information is available for this to be done on a large scale, nor does Dr. Addison wish to anticipate legislation which should be of a comprehensive character.

MAGIC AND MEDICINE.

AN address given three months ago to the British Academy is a good illustration of the application of scientific principles to historical research in medicine, of which Dr. Charles Singer of Oxford is so enthusiastic an exponent. By dint of much industry and the use of many modern mechanical devices he collects his facts, and then applies the comparative method. The subject of his address was early English magic and medicine,[1] and he explains how magical and medical practice of early England has come down, though in a fragmentary state, by two channels—manuscripts and folklore—but he relies mainly on the former. Native magic and medicine was at an early date affected by imported elements of classical, ecclesiastical, or Salernitan origin, but its four characteristic elements were the doctrines of specific venoms, of the magical quality of the number nine, of the worm as the cause of disease (in which we may see the appearance of the widely prevalent belief in the dragon), and lastly the doctrine of the elf-shot, which embodied the belief that a large amount of disease was due not to occupation by, but to the malevolent action of supernatural beings—elves, smiths, or witches—who fired shafts at the sufferer. When English magic and medicine was first influenced from the Mediterranean it was by the debased Greek or Byzantine system, a combination of at least four more or less discordant elements. First, the purely scientific medicine which took its rise from the Ionian philosophers of the seventh century B.C., and was already far advanced by the time of Hippocrates in the fifth century B.C. Secondly, the demoniac medicine inherited from Babylonia and Assyria and based on the theory that disease was due to the entry of a demon into the patient's body, and therefore to be cured by exorcism. Since it was to be assumed that what was bad for the demon must be good for the patient there arose the idea, not yet dead, that nauseous drugs were of particular value; they were intended to disgust the demon and weary him of his habitation in the patient's body. The third element was magic, founded on a primitive unorganized belief as to the relation of cause and effect; the fourth element was common sense or empirical knowledge. Nordic medicine does not seem to have suffered from the demoniac idea; Anglo-Saxon magical processes were designed to remove the *materies morbi* projected into the body of the patient by supernatural beings; they were formulae for the extraction of the elf-shot. In the later part of his address Dr. Singer dealt with the lessons to be learnt from a careful study of manuscript herbals. The earliest showed Mediterranean influences, the figures being, in part at least, copied, for some of them can be identified as Mediterranean species unknown in this country. But the object of a herbal was mainly utilitarian, since it was designed to enable the herb gatherer to recognize the plant; consequently conventions were thrown off, and a herbal prepared at St. Albans about 1120 contains good drawings of native plants made from actual living models. Later the correct English style was swamped by Norman influences, and the true drawings were replaced by gorgeous, elaborate, and beautifully painted plant designs, excellent as decorations, but bearing little resemblance to nature. The

[1] It has been reprinted in a pamphlet, price 4s. net, by the Oxford University Press.

pamphlet is interesting in itself, but of more interest for the scientific method it illustrates. Dr. Singer, we believe, has the ambition to write a history of science, and we may note that at 5.30 p.m. on May 12th he is to give a lecture on Greek Science and Modern Science, a Comparison and a Contrast, at University College, London.

TRIFLING WITH SYPHILIS.

WE have received a pamphlet, "Venereal diseases and their treatment: how not to do it," published by the National Association of Medical Herbalists of Great Britain, Limited. It appears that this association was founded in 1864 and incorporated in 1895. One of its objects is "the diffusion of a knowledge of the therapeutic properties of plants." We shall not quarrel with it over that. We are all of us herbalists; we all make use of the therapeutic properties of plants. The only question is, What is the value of herbs for the treatment of the venereal diseases? We are all for "non-poisonous drugs" if only they will act. We can feel ourselves in touch with Friar Laurence moralizing over his herbs:

> Many for many virtues excellent,
> None but for some, and yet all different.

Our only desire is to do the right thing for our patients. How would Friar Laurence have treated syphilis? What, for example, is the value—the real, ascertained, measured, proven value—of sarsaparilla? A medical herbalist was among the witnesses before the Royal Commission on Venereal Diseases, 1913: his evidence had a touch of Friar Laurence's vague hopefulness, but none of his poetry. The pamphlet is anonymous. It appeals, with some cleverness, to the distrust and the dislike of "orthodox medicine," which are to be found, here and there, among all classes of the community. Some of us are hardly conscious of the existence of this antipathy against our profession; or are content, offhand, to reckon those who are possessed of it as cranks, or as "anti's." But there it is: and this pamphlet is a good instance of it. The writer of it begins, as we should expect, with a reference to some old errors which were "orthodox" enough, more's the pity, once upon a time: John Hunter's mistaken experiment on himself in 1767; Ricord's false notion of gonorrhoea as a non-specific infection—Ricord was a man with a rather nasty mind—and the excessive use of mercury to salivation, and so forth. It seems that any old stick will do to beat us with. Next, the writer comes to the Royal Commission of 1913, with its approval of "the mineral poison treatment" and of "the essential quackery of orthodox claims." *Essential* is good. He thinks that he has discovered the Society for the Prevention of Venereal Disease in a violation of Section 2 of the Venereal Diseases Act, which forbids advertisements of drugs to be used externally or internally as medicines for the prevention, cure, or relief of venereal disease; but, apart from any question as to the interpretation of the words of the section, he has forgotten the proviso which permits advertisement, notification or announcement, or recommendation, published by any public authority or with the sanction of the Local Government Board in England and Wales, Scotland, or Ireland. Finally, he comes to "the modern orthodox treatment of syphilis." He has put together, in the usual paste-and-scissors way, certain statements against salvarsan and the like drugs. As we all know, they are not drugs to play with; but neither is syphilis a disease to play with. He gives a strange twist to an offhand remark by one of the witnesses before the Royal Commission that the venereal diseases are "primarily filth diseases." For he uses it as an argument that "a hygienic treatment of syphilis and gonorrhoea, supplemented by non-poisonous herbal medication, may well be superior to all other forms of treatment." By hygiene he means attention to the general health; but that is part of the "orthodox" treatment. He says that if he published the praises of his herbs he might be prosecuted under the Venereal Diseases Act. Is there no escape from this lame and impotent conclusion? Surely he could find one if he would try hard enough.

UNIVERSITY OF LEEDS.

THE University of Leeds is about to follow the example of the Universities of Liverpool and Manchester by making an appeal for large funds for extensions in various departments. The vice-chancellor, Sir Michael Sadler, at a meeting of the University Court last week, said that the sum of £500,000 was needed in order to enable the university to provide the education and training required by a rapidly increasing number of students, and make it possible for it to take its proper share in research and the advancement of learning. At present the university is unable to admit the large number of students qualified to take advantage of it who are seeking admission. The great majority of the applicants come from Yorkshire schools. The university needs new laboratories for teaching and research in pure and allied science, especially in chemistry, physics, engineering, leather industries, textiles, dyeing, fuel, and mining. The pro-chancellor, Mr. A. G. Lupton, said that help received from local authorities had enabled the university to become the foremost educational institution in that part of the country, and he believed that Leeds would become the greatest university in the country for applied science. Employers and manufacturers, he said, no longer hesitate to employ university trained men, and the great number of students the university now had to deal with was in a large measure the result of the commercial demand for men who had undergone a real scientific training. He added that when he was elected to the Council there were 368 regular students and 602 occasional students, a total of 970, and the fees paid by them amounted to £2,463. In 1904, when the university charter was granted, there were 1,278 students, and the fees they paid amounted to £10,319. In 1919 there were 1,750 students, and the fees received exceeded £22,000. Sir Michael Sadler said that large developments and extensions to the School of Medicine and to the School of Dentistry were needed. Another urgent requirement was a new building for the university library. The demand from all over Yorkshire for college life in association with the university was one of the most striking changes in recent university life at Leeds; the new estate at Weetwood afforded an admirable site for new halls for residents. The university needed also a new large institute as a centre of the students' corporate life and a new gymnasium, which was a necessary part of the physical education given in the university. It was right that those who could afford to pay for university education should contribute towards its cost, and great sacrifices were made by the very large majority of students and their parents, but no higher education in the world was self-supporting. It had to be remembered that above the individual interest and individual gain were the national interest and collective gain. At the same meeting the resignation of Mr. Lupton, the pro-chancellor, was received with much regret, and a resolution recording his great services to the university was unanimously adopted.

ADDITIONS TO THE FRENCH PHARMACOPOEIA.

THE last edition of the French pharmacopoeia, *Codex Medicamentarius Gallicus*, was issued in 1908. The previous edition had appeared in 1884, but a supplement was issued in 1895. A supplement to the *Codex* of 1908 has now been issued. A commission to prepare it was established in April, 1910, and it had nearly completed its task in August, 1914, when its labours were interrupted by the war. The commission was reappointed in 1918, and the supplement came into force on April 1st, 1920. Only four new drugs are added; these are *diéthylmalonylurée*, which appears in the *British Pharmacopoeia* under the name barbitonum (diethyl-barbituric acid), commonly

called veronal; *chlorhydrate de diméthylamino-diméthyl-éthyl-benzoyl carbinol*, or amylocaine hydrochloride, introduced as a local anaesthetic under the name stovaine; *hexaméthylène-tétramine*, which is in the *British Pharmacopoeia* under the name hexamine; the value of this drug was first ascertained in France in 1892, when it was given the name formine; it was afterwards exploited by German manufacturers under the name urotropine; *chlorhydrate de para-aminobenzoyldiéthylaminoéthanol*, which appears in the *British Pharmacopoeia* under the name novocain. The other alterations in the supplement are of minor importance; for instance, piperazin, which was inserted in the last edition under the belief that it was of value in the treatment of gout, was found inconvenient to dispense owing to the readiness with which it absorbed water and carbonic acid; it is replaced by its hydrate, which contains 44 per cent. of water. A new formula is given for a tincture of iodine which is a little weaker than the strong tincture of iodine of the *British Pharmacopoeia*. A liquid extract of red cinchona bark has been introduced containing 3.5 per cent. of total alkaloids, as compared with 5 per cent. in the liquid extract of cinchona of the *British Pharmacopoeia*. A solution of silver nitrate has been inserted for use as a preventive of ophthalmia neonatorum. The most interesting additions made in the supplement, however, are two serums—antidysenteric and antimeningococcus. The former is directed to be the serum of horses immunized by the injection of cultures of the bacillus of Shiga. The test for it is—"one cubic centimetre of dysenteric toxin mixed with one cubic centimetre of the serum must be innocuous when administered by subcutaneous injection to a rabbit; half a cubic centimetre of the serum injected into a rabbit weighing two kilograms must preserve it against the injection of three to four cubic centimetres of a culture of dysenteric bacilli." The antimeningococcus serum is to be obtained from horses immunized by injections of meningococci. Dr. B. Lyonnet of Lyons[1] finds fault with the supplement on the ground of its omissions, particularly of a large number of drugs which are contained in the pharmaceutical formulary for military hospitals, and especially because no organic arsenic preparation for the treatment of syphilis has been inserted. The interval between the last edition and its predecessor was twenty-four years, and Dr. Lyonnet expresses the hope that the new commission, which consists of twenty-four persons, will accomplish its task more speedily, and in this connexion quotes the advice of M. Clemenceau in his speech at Strasbourg on November 4th last: "Do not let us be afraid of overworking ourselves."

TYPHUS IN POLAND.

AN interesting account of the prevalence of typhus in Poland during the years 1916 to 1919 was given to the Section of Epidemiology and State Medicine of the Royal Society of Medicine by its president, Dr. E. W. Goodall, at a meeting on April 23rd. He had studied conditions in Warsaw and in a manufacturing town, Zawiercia, about 170 miles from Warsaw. The prevalence of the disease was considerable; between 1915 and March, 1919, probably not less than 400,000 cases had occurred in the whole country. The general fatality was low—from 7 to 10 per cent., increasing rapidly with age. The epidemic curve showed a winter maximum, but numerous cases continued to occur during the summer. The form of the curve in the two towns studied did not seem much modified by such administrative measures as were found practicable. The chief causes of the prevalence were constant warfare, influx of prisoners, and lack of soap, clothing, transport, fuel, and food. During the war the Germans made vigorous efforts to keep down typhus, compelling de-lousing at the point of the bayonet. After the armistice, not only did economic conditions fail to improve, but there was more circulation of the civilian inhabitants, and thousands of Russian prisoners passed through eastwards. The general conditions at the end of 1918 were extremely bad. Housing was very unsatisfactory, and there were large numbers of old wooden huts which could not be cleansed short of burning them down. The Polish authorities attempted to maintain a sanitary cordon on the south-east frontier, but both staff and material were lacking. The paper was discussed by Dr. G. S. Buchanan, C.B., who was in the chair, Colonel Hunter, Major General Sir William Macpherson, Dr. Hamer, and Major Byam.

[1] *Lyon Médical*, April 10th, 1920.

THE OSLER MEMORIAL VOLUMES.

THE contributions to medical and biological research made by his friends and pupils as a tribute to Sir William Osler on his 70th birthday last July, have now reached this country. They form two volumes, well printed and well illustrated, which are now being distributed to the subscribers. The contributors number nearly 150, and are drawn from both sides of the Atlantic. In the arrangement of their articles a rough classification into four groups may be noted—the first mainly historical, the third mainly biographical, the second and fourth clinical and biological. The first paper in the volumes, appropriately enough, is an account by Dr. T. D. Acland, of the Oxford University Museum, illustrated by a picture of it and by portraits of Ruskin, Sir Henry Acland and Sir John Burdon-Sanderson; Dr. Arnold Chaplin has added a short essay on the Oxford Medical School in the eighteenth century; Sir Archibald Garrod, Sir William Osler's successor, has an essay on the laboratory and the ward, and Sir Auckland Geddes another on social reconstruction and the medical profession. Professor Arthur Keith writes a characteristic essay, a mixture of history, gossip, and science, on the cradle of the Hunterian school. Later Dr. Walsh contributes an impression of the influence of English medicine upon American medicine in its formative period, which, as distinguished from Scottish medicine, was, he says, most marked in the later part of the eighteenth and the first three decades of the nineteenth century, and came largely from the great London surgeons, Percival Pott and John Hunter, and their successors, especially Abernethy and Astley Cooper. Of the clinical papers we cannot profess to give any account, only noting that Professor Lewellys Barker, who succeeded Osler at Johns Hopkins, writes on the diagnosis of general and regional athero-sclerotic processes; Dr. Koplik on the intimate relation of chorea, rheumatism, and cardiac diseases; Dr. Councilman on the heart and kidneys of old people, and Dr. Simon Flexner on the epidemiology of poliomyelitis. Sir Clifford Allbutt has contributed an historical paper on the innate heat; and the short address he gave at the meeting held on July 11th, 1920, to celebrate Osler's birthday on the following day, serves as a preface to the volumes.

THE Society of Apothecaries has subscribed £10 10s. to the Keats Memorial House Fund. The poet Keats was one of the earliest licentiates of the society; he was examined by the celebrated Dr. Brande, and qualified in 1816.

THE complimentary dinner to Sir G. H. Makins, G.C.M.G., P.R.C.S., will be held on Monday, May 10th, at the Wharncliffe Rooms, Hotel Great Central, at 7.30 p.m. for 7.45. Sir Cuthbert Wallace will take the chair. Any of Sir George Makins's friends who would like to be present are asked (if they have not already done so) to notify Mr. C. Max Page, 134, Harley Street, W.1, in order that seating arrangements may be made. Payment for the dinner (one guinea, not including wine) will be made at the Wharncliffe Rooms. No tickets will be issued.

Medical Notes in Parliament.

National Insurance Bill.

Measure through Committee.

THE National Health Insurance Amending Bill was passed through Grand Committee of the House of Commons on April 27th.

Mr. Godfrey Locker-Lampson moved an amendment that local authorities providing treatment for sufferers from tuberculosis should co-opt persons with experience of the working of tuberculosis treatment. Dr. Addison said that the reason for taking sanatorium benefit out of the National Insurance Bill was that health services were in contemplation which would deal with tuberculosis. A certain amount of work had already been done at the tuberculosis dispensaries by local authorities. The county councils had, with a few exceptions, provided sanatoriums, and the Insurance Committees had made arrangements for the reception of their cases. It had been however found, partly as a result of the war, that a great many patients after they returned to their work relapsed and died from the disease. Last year the Treasury made grants to enable the local authorities to provide training as an adjunct to sanatorium treatment; it would be possible to secure training in alternative occupations, and this would have enormously beneficial effects. There must be one authority competent to deal with the whole question. He promised there should be an opportunity of co-opting on the new authorities members of Insurance Committees who had special experience of tuberculosis. The amendment was withdrawn.

An amendment to Part II of the Fourth Schedule of the Act of 1911 was made to alter the wage limit from £150 to £250, up to which voluntary contributors might come in for medical benefits.

Major Farquharson moved to insert after Clause 8 of the bill a new clause to provide that any medical practitioner who felt aggrieved by a decision of the Minister of Health, or of any special body through which the powers of the Minister were exercised, to remove his name from the list of medical practitioners (or a panel), might appeal against the decision to the High Court. Major Farquharson, in a vigorous speech, said this was a very serious matter. A medical man should not be liable to be put by a departmental or interdepartmental judicial process in such a position as was indicated. With every respect for the department and the departmental officials, he felt that a practitioner who was struck off might have a grievance. The right of appeal was one which did not arise out of contract law, but out of common law, and it was the constitutional right of aggrieved persons that they should be able to appeal to a higher authority. Dr. Addison, in refusing to accept the proposal, said that when after due inquiry by fellow practitioners a medical man on a panel was found not to be rendering such services as he ought to render in view of the obligations he had entered into, then his services could be dispensed with. The same rule might be applied to any other officers engaged on any other duty. It was quite impossible that in every circumstance of that kind in the administration of a great organization there should be power of appeal to the courts as to whether or not that man was doing his duty.

Dr. Farquharson said he should press for a division, but the amendment was negatived without one.

Revision of the Dentists Act.—Dr. Addison, in answer to Mr. Raffan, regretted that he could not say when legislation would be introduced to carry out the recommendations of the Departmental Committee on the Dentists Act, 1878, but he thought very probably he could make a statement on the subject before Whitsuntide.

Blinded Soldiers.—On an inquiry by Mr. Foreman, on April 22nd, Major Tryon said that approximately 1,300 soldiers discharged for total blindness had been pensioned under the Royal Warrant, and 110 had been refused pensions. The latter were men whose blindness arose from causes not connected with military service or due to their own serious negligence or misconduct. All men discharged for blindness were sent to St. Dunstan's (or in Scotland to Newington House, Edinburgh), where they were trained to new occupations. The disablement pension for total blindness carried from 40s. to 60s. according to rank, with a constant attendant allowance of 10s. to 20s. a week, a wife's allowance of 10s. a week, and an additional allowance for children. Any men sent to St. Dunstan's were provided for.

Pensions for the Blind.—On April 26th Dr. Addison introduced a bill in regard to the treatment of the blind, and it was read a first time. No particulars were given, but the chief feature is understood to be to bring all blind persons who cannot earn their living at the age of 50 within the privileges that belong to old age pensioners normally at the age of 70.

Surgeon Rear Admirals.—Sir Watson Cheyne asked, on April 21st, whether, in the April Navy List, only four officers were shown under the heading of Surgeon Rear Admiral; whether no surgeon captains had been promoted to fill the two vacancies created by a retirement in February last, and the addition of one surgeon rear admiral to the list, as announced in March; and whether there was any reason why surgeon captains should not be promoted at once on the occurrence of vacancies in the same way as captains in the executive branch were promoted to fill vacancies in the rear admirals list. Sir James Craig replied that the question of promoting officers to fill the vacancies on the surgeon rear admirals list was now under the consideration of the Board of Admiralty, and it was hoped to announce the promotions at an early date. With regard to the second part of the question, the reason was that promotion to the rank of surgeon rear admiral was by selection, whereas promotion to rear admiral was normally made by seniority.

Medical Examinations in Elementary Schools.—In reply to Mr. Doyle, on April 21st, the Minister of Health said that it was not necessary nor practicable to ask education authorities to arrange for the weekly attendance of school doctors at each school. Out of 318 local education authorities in England and Wales, school nurses were performing some of the functions to which reference was made in 310. In reply to Mr. Billing, Dr. Addison said that he believed tooth cleaning drill for small children was already in operation. In reply to Mr. Dan Irving, he said that there were not enough doctors and nurses in the country to review every child every day. The school teachers, who were well trained and instructed in the matter, reviewed the children every day.

The Cost of Public Vaccination.—In reply to Mr. Waterson, on April 22nd, Dr. Addison said that the approximate cost of public vaccination in England and Wales was £168,000 in the financial year 1912–13 and £112,000 in the financial year 1918–19. He had no separate information as to the cost of vaccination officers.

Treatment Allowances to ex-Service Men.—In reply to Mr. Irving, on April 21st, Major Tryon (Ministry of Pensions) said that Circular 204 of February 6th did not involve any modification of the rights of disabled men. The primary function of the Deputy Commissioner of Medical Service under the circular was to procure for the men the form of treatment most suitable. Many men had in the past been recommended for home treatment who would have been better treated in one or other of the special institutions of the Ministry, a matter on which medical referees were of necessity not so well informed as the medical officers of the department. It was also the function of the Deputy Commissioner to assist in the protection of public funds by insuring that treatment allowances were confined to those cases for which they were intended by Article 6 of the Royal Warrant. The suggestion to revert to the earlier arrangement could not be entertained.

Bread.—Lieut.-Colonel Raw asked, on April 21st, whether under the present system of flour milling the germ and certain other constituents of wheat necessary to provide the most nutritious form of bread were removed from the flour. Dr. Addison said he understood that the percentage of extraction required by regulation was a minimum. There was nothing to prevent the making of bread from flour containing a higher percentage of the wheat if the demand existed.

Service in Northern Nigeria.—Earl Winterton asked a question, on April 21st, as to the regular tour of service for civil servants in Northern Nigeria. Lieut.-Colonel Amery said that probably the reference was to the eighteen months' tour for political and police officers only, which was introduced in Northern Nigeria in 1903 and abandoned in 1907. Health conditions in West Africa had greatly improved since then, and a committee, which included the recently retired director of the Medical and Sanitary Service of Nigeria, had unanimously recommended that the normal length of tour should be lengthened, and that the rule should be made more elastic so as to enable the length of tour to be varied according to circumstances. The report of the committee was being referred to the West African Governments. In reply to a subsequent question, he said that the number of European officers in the Nigerian service was 1,657 and in the Gold Coast service 673. The European medical officers were: In Nigeria, establishment 128, strength 91; in the Gold Coast, establishment 67, strength 48.

Answers in Brief.

The distress caused to many householders living on main thoroughfares by the noise of heavy vehicles at night has been included in the terms of reference to the Departmental Committee on the Taxation and Regulation of Road Vehicles, to which also the matter of the registration of motor vehicles has been referred.

Mr. Chamberlain can hold out no hope that the duties on table waters will be reduced, notwithstanding the allegation that the tax is greater in proportion than that on spirits or beer.

Major Tryon denies that there is any avoidable delay in settling the claims of officers' widows to alternative pensions, having regard to the difficulties in the verification of pre-war earnings.

England and Wales.

WELSH NATIONAL MEDICAL SCHOOL.

AT the inaugural meeting of the scientific section of the Cardiff Medical Students' Club last week, Sir Robert Jones gave an address on the future of the Welsh National Medical School. The school had, he said, been in existence for over a quarter of a century, but had remained in the chrysalis state. The Welsh student could obtain in Wales instruction in the preliminary sciences, and in Cardiff training in anatomy and physiology, but after that he had to become a wanderer. There was no reason, he said, why this should continue. The Welsh National Medical School would only be born when it was self-dependent and could train its own students for the final medical degrees. To produce great surgeons and great physicians in adequate numbers they must be afforded opportunities to teach, for the most promising got into routine and humdrum ways unless they were kept up to the mark by students; nothing educated a teacher more than to be asked reasons for his acts. The understanding which grew up between teacher and student in a complete medical school was a valuable asset, creating an affection for the Alma Mater, keeping the old student in contact with the new, and fostering a desire for post-graduate courses. Teaching posts in the Welsh National Medical School ought to be made so attractive that the best men from all parts of the world would feel honoured by an invitation to join it.

The clinical opportunities afforded by Cardiff might be made unrivalled. At his first visit to the King Edward VII Hospital in 1900 he found it to be one of the most perfect hospitals, well equipped, well ventilated, and not overcrowded. Unfortunately, with the growth of the city of Cardiff and of the population within its sphere, an attempt was made to meet the demand for beds by putting up additional buildings on the site, thus using up the lungs of the hospital. Apart from that, the number of beds provided (400) was hopelessly inadequate; 1,500 beds with opportunities for extension were needed from the point of view both of the public and of the National Medical School. He had recently been asked to make a report on the provision for orthopaedics at the King Edward VII Hospital, and he had laid it down as a fundamental principle and condition that no in-patient hospital for children should be tolerated in the centre of the city. The present hospital should provide only in-patient clinics and a few beds for urgent cases; these urgent cases should, as soon as possible, be transferred to the country beds. Experience had taught him the injustice of segregating sick and crippled children in city hospital wards. He praised the hospital established by Sir John Lynn-Thomas for the Welsh National Memorial at Glanely, a few miles from Cardiff. In such a hospital it was impossible to close a ward, and through sunshine and storm one side was always open. A visit to the children in such hospitals was an inspiration; moreover, infectious diseases, which were the bane of children's hospital wards, never spread, nor did the children catch cold or develop pneumonia.

Cardiff, Sir Robert Jones continued, had a great opportunity to start the clinical side of its hospital and medical school on modern lines. There should be provided 1,500 beds in the country within easy reach of the centre of the city, and to the new site the in-patient activities of the complete staff of the hospital should be transferred. Of the total number of beds, at least 150 would be required for orthopaedic cases in adults and children. With a sufficient number of beds it would no longer be necessary to send patients home half cured to make room for urgent cases.

Another point Sir Robert Jones made was the importance of giving responsibility to the junior members of the staff—a lesson learnt during the war, when the advances came from the younger men, who were the backbone of the medical services. An assistant surgeon should have beds placed at his disposal early before his mental activities waned; only so could that originality of outlook so necessary for his full development be attained. Cardiff possessed other institutions—the Glanely Hospital for Surgical Tuberculosis to which reference had already been made, the Royal Hamadryad Seamen's Hospital, the Prince of Wales's Hospital for the Limbless (established through the efforts of Sir John Lynn-Thomas), a sanatorium for infectious diseases, and one of the finest mental hospitals in the world, under a distinguished expert, Dr. Goodall. The M.D. and M.Ch. degrees of the Welsh University should be of a standard which would fit a man to fill the highest posts. In conclusion, Sir Robert Jones spoke of the pleasure with which he had learned that the education of Cardiff students in orthopaedics was not neglected; most of his life had been spent in the study and practice of that branch of surgery, and he expressed the opinion that if orthopaedics were adequately and efficiently taught the so-called bonesetters who visited every town would find their vocation gone.

A vote of thanks to Sir Robert Jones, moved by the Principal of the University College, Cardiff, and seconded by Professor Hepburn, was supported by the Lord Mayor of Cardiff, who said that the city was vitally interested in the medical school, and desired it to be equipped in the best manner; to achieve that end there was ample room for private generosity.

GENERAL NURSING COUNCIL.

The Ministry of Health announces that the following have been appointed to form the first General Nursing Council under the Nurses' Registration Act of 1919. The duty of the Council is to form and keep a register of nurses in accordance with the provisions of the Act.

Appointed by the Privy Council.—Lady Hobhouse, Mr. J. C. Priestley, K.C.

Appointed by the Board of Education.—Hon. Mrs. Eustace Hills, Miss Batty Tuke, Bedford College.

Appointed by the Minister of Health.—The Rev. G. B. Cronshaw, Radcliffe Infirmary, Oxford; Dr. E. W. Goodall, Professor A. Bostock Hill, M.D., Dr. Bedford Pierce, Sir T. Jenner Verrall, LL.D.

Nurses Appointed by the Minister of Health.—Miss A. Cattell, private practice; Mr. T. Christian, Nurse Banstead Lunatic Asylum; Miss A. Coulton, Matron Shadwell Children's Hospital; Miss R. Cox-Davies, R.R.C., Matron Royal Free Hospital; Miss A. Dowbiggin, C.B.E., R.R.C., Matron Edmonton Poor Law Infirmary; Mrs. E. G. B. Fenwick, formerly Matron St. Bartholomew's Hospital; Miss A. Lloyd-Still, C.B.E., R.R.C., Matron St. Thomas's Hospital; Miss M. MacCullum, Professional Union of Trained Nurses; Miss I. Macdonald, Royal British Nursing Association; Miss A. M. Peterkin, General Superintendent Queen Victoria Jubilee Nurses; Miss E. Smith, Welsh Superintendent Queen Victoria's Jubilee Institute for Nurses; Miss M. E. Sparshott, C.B.E., R.R.C., Matron Royal Infirmary, Manchester; Miss E. C. Swiss, Health Visitor for Willesden; Miss S. E. Villiers, Matron Stockwell Fever Hospital; Miss C. Worsley, Matron Liverpool Children's Hospital; Miss C. S. Yapp, Matron, Ashton-under-Lyne Poor Law Infirmary.

Mr. Priestley has been appointed to be the Chairman of the Council.

CONSULTING SURGEON AND HOUSE-SURGEON.

In relating recently how Mr. E. J. Domville, O.B.E., consulting surgeon to the Royal Devon and Exeter Hospital, had acted as house-surgeon in that hospital during the war, we ventured a doubt whether anyone else had had a similar experience. We now learn that Mr. J. T. Williams, honorary consulting surgeon to the North Lonsdale Hospital, Barrow-in-Furness, is in exactly parallel case. After being honorary surgeon to the hospital from 1873 he retired in May, 1914, but in the autumn of that year, as the authorities were unable to obtain house-surgeons, he took up that work, which he has carried on down to the present time.

CENTRAL MIDWIVES BOARD.

At a penal meeting of the Central Midwives Board for England and Wales, held on April 21st, Sir Francis Champneys presiding, five midwives were struck off the roll and two were put on probation. One of the midwives who was in attendance on a puerperal patient, and who, notwithstanding, visited other lying-in women, stated in her defence that the doctor who was called in to her infectious case, gave her permission to finish three cases she was visiting, after which she was to abstain from practice for a month. The board decided to forward this statement to the local supervising authority for inquiry, and to call attention to its bearing on the jurisdiction of the board. The ordinary monthly meeting was held on April 22nd, when Sir Francis Champneys, who has held the post now for eighteen years, was unanimously re-elected

chairman. The Finance and Penal Cases Committees were re-elected. It was reported that the Minister of Health had approved, for the purpose of the apportionment of contributions from local supervising authorities, the balance of £3,395 7s. 10d., shown against the board in the finance statement for the year 1919. The list, as submitted by the secretary, of institutions, honorary, and midwives at which and under whom pupil midwives may be trained, was approved until March 31st next.

Scotland.

EXTENSIONS AT THE UNIVERSITY OF EDINBURGH.

THE KING has promised to lay the foundation stone of the new chemical laboratory of the University of Edinburgh in July next. The laboratory will be the first building on the University's 150 acres at Craigmillar, into possession of which it came last November. The King is expected to arrive at Holyrood on July 3rd and to stay there until July 10th. New laboratories for the histological department have been provided by adding another story to the Forestry building in George Square; the work was only begun last December, but the new laboratories will be ready to receive 150 students this week. Under the direction of Sir Edward Sharpey Schafer three large laboratories, with a professor's room, assistants' and preparing rooms, have been equipped. The rooms are well lighted, ventilated, and heated. It is intended to have two classes a day, so that it will be possible to pass 300 students through the course. The University Grants Committee will visit the University of Edinburgh on May 13th and 14th.

GREATER EDINBURGH.

How closely modern medicine and civic matters are interlocked is being clearly demonstrated in the inquiry which has been going on before the Select Committee of the House of Lords in connexion with the Edinburgh Boundaries Extension and Tramways Bill. Some years ago such questions as rates and trade and convenience would have been the all-important deciding factors; now health administration, the checking of the spread of infection, housing as part of hygiene, mother and child welfare schemes, the provision of maternity accommodation and of small-pox hospitals, are all playing a considerable part in the evidence which is being presented more especially in relation to the proposed inclusion of Leith within Greater Edinburgh. "None of us liveth to himself" is true not only of the individual man but also of the individual city, especially when it touches so closely as to be indistinguishable (when seen by aeroplane) from its neighbour city. Other plans instead of absorption may be devised and carried out, but there seems no doubt that for the health and well-being of two contiguous towns something of the nature of common action and joint control is to be sought for.

SMALL-POX IN GLASGOW.

Down to April 24th the outbreak of small-pox, which began early in March, had led to the recognition of twenty-eight cases, of which four proved fatal. Two other deaths were due, it is believed, to unrecognized forms of the disease. The majority of the patients are children. This is to be attributed to the fact, noted last week, that the proportion of infants successfully vaccinated in Glasgow has declined continuously since the Vaccination Act of 1907, so that at the present time not more than half the number born are protected. Of the twenty-five cases of small-pox in hospital, nine are children under 15 years of age who had not been vaccinated, in another case there was no record or evidence of vaccination, and nine had been vaccinated in infancy but were now, with one exception, over 15 years of age.

INSPECTOR OF ANATOMY.

The Secretary for Scotland has appointed Dr. Norman Walker to be Inspector of Anatomy, a post he has held temporarily during the last two years. During Dr. Walker's absence in America his place will be taken by Dr. F. W. N. Haultain.

Ireland.

OBJECTIONS TO PROPOSED SITE FOR BELFAST TUBERCULOSIS SANATORIUM.

DR. N. C. PATRICK, Local Government Board inspector, opened an inquiry in Belfast on April 21st in regard to the application of the County Council of Down for sanction to a loan of £27,000 for the purpose of providing a sanatorium for tuberculosis.

Craigavon is the residence of Sir James Craig, Bt., and was lent by him to the Ulster Volunteer Force Hospital Board, which organized a hospital for pensioners suffering from neurasthenia and allied conditions, built an annexe containing seventy-four beds, and provided workshops for carpentry, mechanics, bootmaking, tailoring, and other trades, and also training in outdoor work. The garden was taken over, but has not yet been used by the patients. The Down County Council was on the look-out before the war for a tuberculosis sanatorium. The project fell into abeyance, but the Council has now made an offer of £26,000 for the place as it stands. Strong opposition has arisen from various quarters, among the opponents being the trustees of the Ker estate, the ratepayers of the district, the Castlereagh Rural District Council, the Bangor Urban District Council, and the Belfast Corporation.

Counsel, in stating the case for the Down County Council, said that efforts made in 1913 for the acquisition of several sites had all fallen through for varying reasons. In December, 1919, a letter from the Local Government Board called for increased facilities in the institutional treatment of consumption. The reports of the officers of the Down County Council stated that Craigavon would be suitable, and as it was estimated that a sum of £66,000 would be required to erect similar buildings, the Down County Council had made the present offer.

Evidence was given on the financial and general aspect by various witnesses. Dr. J. R. Gillespie, chief tuberculosis officer for co. Down, said that Craigavon was a suitable site, and that its proximity to Belfast would be helpful; both water and sewerage were satisfactory, and the place was sheltered by trees from the north. He considered that the effluvia from the lough had much abated in latter years, and thought there was no fear of infection spreading to the homes of the petitioners.

Dr. W. J. Wilson, lecturer in public health, Queen's University, Belfast, said he had known the district for fifteen years, and had recently made a special inspection of Craigavon. He considered patients could be admirably treated there, and that none of the objections brought forward were very serious. There would be no danger to the boys attending Campbell College in the vicinity, and the nearest resident to Craigavon was about a fifth of a mile away. He admitted that the patients could travel to Belfast in the tramcars and visit the cinemas, and he could understand the objections of the citizens to patients in an advanced stage coming into the city, but that was a matter of internal arrangement and control.

Dr. Charles J. Alexander, medical superintendent of the Forster Green Hospital for Consumption, Belfast, also gave evidence as to the suitability of Craigavon as a sanatorium. Building developments had taken place round the Forster Green Hospital and the land around used for grazing cattle, yet no complaints had ever been received as to infection arising therefrom.

Counsel, in stating the case for the petitioners, said that the county had a population of roughly 200,000, the larger part residing in the southern area. A sum of £17,000 had been expended on Craigavon for the benefit of the neurasthenic soldiers and was to be applied for that purpose until the hospital became unnecessary; it was now full and was still urgently needed; if the County Council once acquired this property it would be bound to continue the project, no matter what the cost—or the unsuitability of the place.

Mr. T. S. Kirk, surgeon to the Royal Victoria Hospital, Belfast, and surgeon in charge of the Throne Children's Hospital, said that Craigavon was not an ideal site, because cases of tuberculosis did badly in Belfast; he thought the cause of this was climatic and due to the conditions of the Lagan Valley; any situation in this valley was unsuitable. The fact that the site was adjacent to a large manufacturing town made it still more unsuitable.

Dr. Benjamin H. Steede, medical superintendent of the Rostrevor Sanatorium, stated that he had four chief objections to the present site: it was too low, too near Belfast Lough, too near the city, and had no proper natural shelter. The principal thing was to get dry, pure, bracing air; the liability of Craigavon to fog was increased by its low level; he thought it would be exceedingly difficult to prevent patients going into the town.

Professor J. A. Lindsay, F.R.C.P., of Queen's University, said that he had formed the opinion that Craigavon was highly unsuitable for a sanatorium, both as regards its site and buildings. It was too near the city, and he could not recall an instance of placing a modern sanatorium so near a large town. Belfast was highly infected by tuberculosis mainly because it lay low, on a damp soil, and the atmosphere was

contaminated by various industries. The tuberculosis rate varied from 2.2 to 2.5 per 1,000, which was much higher than in the large towns of England. Belfast had also a high rate of mortality for diseases of the lungs in general, and he was at a loss to know why tuberculous cases should be brought into a highly infected area. The buildings had a wrong aspect, facing W.N.W., and lay from east to north-east of the city, so that the prevailing south-west winds carried pollution and dust towards Craigavon. The fact that there was at present a great deal of hostile criticism of sanatoriums and their value made it all the more desirable that any sanatorium established should not be open to any serious objection. Regulated exercise was a part of the treatment, but Craigavon was close to the tram lines. It was an advantage that the house had thirty-five acres of land and was self-contained, and that the soil was light and sandy; but Professor Lindsay said that in the vicinity the soil was heavy and clayey.

Numerous residents gave evidence of the prevalence of fogs and in the summer of obnoxious smells from the lough. Dr. Charles O'Neill, on behalf of the Castlereagh Council, Dr. Mitchell, M.O.H. Bangor, and Dr. Baillie, M.O.H. Belfast, gave evidence against the project.

Ulster Medical Society.

The president, Mr. Andrew Fullerton, C.B., C.M.G., F.R.C.S.I., and Mrs. Fullerton, held a reception at the Ulster Medical Institute on April 22nd, which was attended by members of the society and their wives to the number of about 200. The hospitality of the president and Mrs. Fullerton and the excellent music, both vocal and instrumental, were highly appreciated.

India.

Maternity and Child Welfare Exhibition at Delhi.

For a week during last February an exhibition was held at Delhi for the purpose of demonstrating by means of models, pictures, lantern and film representation, lectures, discussions, talks, pamphlets, posters, etc., the influences, good and bad, conditioning health generally, and especially the health and welfare of mothers and children. It was the first time such an exhibition had been held in India, and the suggestion came from the Association of Medical Women in India. The exhibition was organized by an influential general committee and a number of subcommittees for special purposes. It was divided into seven main sections dealing with pre-maternity, maternity, infant welfare, childhood, first aid, home nursing and domestic hygiene, and sanitation. The exhibits in these sections are well represented in a series of excellent photographs which have been sent to us. The proceedings in each section appear to have been highly interesting and complete. It is hoped that similar exhibitions will be held in other large Indian cities. That in Delhi was opened by Lady Chelmsford, wife of the Viceroy. In a very sympathetic speech she announced that a league was about to be created under her name and patronage for the purpose of providing increased accommodation throughout India for lying-in women in hospitals or maternity homes; to promote the better education of *dais*; to establish centres for the loan or gift of necessary articles for women who cannot attend hospitals during the time of their confinement, and to multiply the number of maternity and infant welfare centres and schools for mothers; to raise an endowment to prevent privation among women at the time of childbirth; and, finally, to educate and qualify health visitors and to assist in paying their stipends. The attendance at the exhibition was large, and included Indian noblemen and their families, medical men and women, nurses, and a crowd of Indians of both sexes, for whom reduced railway fares, a camp, refreshments, and amusements were provided. The good resulting from this and other similar enterprises cannot be otherwise than substantial and widespread. Apart from the special objects of the show, it must also make for general enlightenment and the improvement of public health.

The Leper Problem.

Forty-six missionaries, including six medical men, took part in a conference, summoned by the Mission to Lepers, in Calcutta in February. Sir Leonard Rogers, I.M.S., and Colonel F. H. G. Hutchinson, I.M.S., attended as delegates of the Indian Government, and the Hon. Sir Henry Wheeler welcomed the members on behalf of the Government of Bengal. The conference recognized that leprosy is a slowly contagious disease, in which the nasal discharge is frequently infectious before the stage of ulceration has been reached; that, although it is not hereditary, children are peculiarly susceptible of infection; and that segregation is the most effective measure for reducing the prevalence of the disease. It was recommended that voluntary segregation should be encouraged, except in the case of pauper lepers, in respect of whom compulsory powers should be obtained and settlements established.

The conference recommended that facilities should be provided for the training of medical assistants in the diagnosis and treatment of leprosy, and that grants for research should be sought. In view of the considerable degree of fecundity of lepers, especially of females, the separation of the sexes—when possible—was advised; where this was not practicable, married lepers should only be allowed to live together on the understanding that any children born to them should be taken away at the earliest possible age. It was also recommended that the definition of a leper in the Indian Leprosy Act of 1918 should be so altered by the omission of the words "in whom the process of ulceration has commenced" as to read: "any person suffering from any variety of leprosy." A bill which has since been introduced in the Imperial Legislative Council to amend the Act of 1918 follows very closely the recommendations of the Calcutta conference.

Indigenous Medicine.

At a recent meeting of the Imperial Legislative Council at Delhi Mr. Jaffer proposed that a sum of five lakhs should be granted to the Ayurvedic and Yunani Tibbi College at Delhi for building and equipment. The proposal was supported by a number of Indian members. Sir William Vincent, replying for the Government, said that it was anxious to co-operate, and he would gladly receive a deputation and do his best to get financial aid from the Finance Minister. The Viceroy, he believed, would open the building later on. The motion was withdrawn after the mover had thanked Sir William Vincent. Recently the Government of Bihar and Orissa, in answer to a request for recognition of an Ayurvedic dispensary, said that the policy of the Government had been to recognize only such dispensaries as were in the charge of medical practitioners trained in Government schools of medicine and under the control and supervision of civil surgeons and of the inspector-general of civil hospitals. Recognition of an Ayurvedic dispensary was, therefore, barred by the rules for the management of Government hospitals and dispensaries.

Influenza.

A report issued by the Sanitary Commissioner with the Government of India, issued on March 23rd, stated that influenza was prevalent in the Bombay Presidency and had been the cause of 940 deaths during the previous two weeks. In the United Provinces the disease had prevailed in a mild form during the last fortnight of February, and in the Madras Presidency the incidence was small. In Bengal deaths from the disease were recorded in twenty-two municipalities. In the city of Calcutta it appeared to be declining. A severe outbreak occurred near the Naini Tal district, and the disease was reported to be present among the coolies in the Simla catchment area. The epidemic was present in Darjeeling; the mortality was increasing in the gardens.

Small-pox in Calcutta.

An epidemic of small-pox now prevailing in Calcutta has swelled the total mortality rate to 59.3 per 1,000 as against 51.1, the highest figure recorded during the corresponding period of the previous five years. During the week ending January 31st last, after a brief lull, there was a general increase of the disease all over the city, the deaths from the disease numbered 227 as compared with 169 in the previous week.

China.

PROPOSED NEW BRANCH OF THE ASSOCIATION.

AT a meeting of British doctors recently held in Peking, it was decided that, owing to the considerable developments which had recently taken place in the practice of western medicine in China, the time was ripe for the formation of a new Branch of the British Medical Association, larger than the existing Hong Kong and China Branch which was established thirty years ago. The honorary secretary, Dr. Oswald Marriott, was requested to make preliminary arrangements.

JOINT CONFERENCE OF ENGLISH AND CHINESE DOCTORS.

The biennial joint conference of the China Medical Missionary Society and the National Medical Association —a body of foreign-trained Chinese medical men—was held at Peking in February. One hundred and seventy members of the former body attended, Mr. C. J. Davenport, F.R.C.S., of Shanghai, being in the chair; 65 members of the latter society took part, under the presidency of Dr. Wu Lien Têh, who stated that his fellow members desired at all times to work in co-operation with their English colleagues.

In a historical paper Dr. E. T. Hsieh reviewed the conditions of anatomical investigation and knowledge from the Huang-ti period (2697 B.C.), and pointed out that the accurate study of human dissections not having been possible, little or no advance had been made since the Ming dynasty (1644). Dr. S. P. Chen reported that the Chinese Government now recognized that students should have opportunities for dissection; they were willing to authorize the use of unclaimed bodies, but were to some extent hampered by popular feeling, which was still far from favourable. Other speakers referred to recent changes in attitude of the Chinese Government towards medicine and surgery, which were formerly regarded with suspicion and animosity; the founding of the China Medical Board (the Rockefeller Endowment), Hong Kong University, and the Chinanfu and other medical colleges had led medical activities to be tolerated and even encouraged, and very large numbers of Chinese students were now entering the profession.

In the section of surgery Dr. Oscar Thomson reported a series of 3,000 operations for vesical calculus, and Dr. J. A. B. Branch recorded favourable results from the treatment of empyema by lavage with Dakin's solution. Dr. H. J. Howard discussed the origin and physiology of the vitreous humour. Professor M. Inouye of Tokyo, in a paper based on dissection as well as on experimental and clinical findings, put forward the view that the muscles of the soft palate were innervated, not from the pharyngeal plexus, but from the second division of the trigeminal, by way of the palatine nerves. Drs. J. W. Chun and L. T. Wu described the management of the last cholera outbreak at Harbin, and reported that by the use of Rogers's hypertonic saline infusions the mortality in a series of 2,000 cases had been reduced to 14 per cent.; Dr. Brafladt advocated the exhibition of kaolin (aluminium silicate), infusions being reserved for the most severe cases. Dr. W. W. Cadbury discussed the treatment of leprosy, and Dr. P. T. Watson advised widespread prophylactic vaccination against plague.

A general review of public health problems in China was given by Dr. S. Woo, and papers were read by Dr. Van Buskirk on the diet of Koreans, and by Dr. S. D. Wilson on that of the Chinese. Dr. Wu Lien Têh, in an address on the latest phase of the narcotic problem, pointed out that the Chinese imports of morphine had increased fivefold between 1911 and 1919; the conference passed a resolution urging that immediate action should be taken to secure better control of the production of opium, and the limitation of the manufacture of morphine and other derivatives to a quantity not exceeding that necessary for legitimate medical purposes.

THE medical profession of New York have contributed 10,000 dollars to supply food to medical practitioners in Vienna. Dr. Linsly R. Williams has left Paris for Vienna to arrange for its distribution.

Correspondence.

DIAGNOSIS AND TREATMENT.

SIR,—The two addresses appearing in the JOURNAL of April 24th, one by Dr. A. F. Hurst on the "Pathology, Diagnosis, and Treatment of Gastric and Duodenal Ulcer," and the other by Dr. Edmund I. Spriggs on "Surprises in Diagnosis," must make us all think how inadequate are our present opportunities and means of treating the diseases referred to in these two papers.

It seems to me that for the vast bulk of our patients, whether hospital or private, it is impossible to carry out any thorough examination or treatment as recommended by these authors.

Of course, the few rich can have this advantage, also the hospital poor, where special men and departments exist. How many hospitals in England, apart from the large towns, contain the complete *x*-ray apparatus, bacteriological and chemical apparatus, etc., with trained men? Comparatively few.

It is almost useless to recommend these detailed and almost impossible methods until the laboratories and the men able to carry out these examinations are forthcoming. It is this great difficulty of making a full diagnosis and carrying out a complete treatment which needs most careful thought.

The panel system as regards the "whole" treatment of the patient has failed, for all special treatment, if it is carried out, has to be carried out elsewhere.

What we require is some great scheme for the treatment of the whole body, adaptable to every town. To decide how this is to be done will require great vision and statesmanship; whether it is possible without State help is doubtful.

What I fear is this, that a plan may be started and forced upon us—this has happened once before—before the scheme has been thoroughly digested and approved by the men who know most about the subject.—I am, etc.,

Folkestone, April 26th. W. J. TYSON, M.D., F.R.C.P.

TUBERCULOSIS SANATORIUMS.

SIR,—In connexion with the discussion on the decrease in the decline of the consumption death rate, may I point out, first, that a mild form of tuberculous infection is almost universal in the early life of town populations, and secondly, that malignant cases appear to give rise to similar cases?

In sanatoriums a very malignant form is always present in the wards, and those who are admitted with a mild form probably contract there a severer form and convey it to their family. Before the sanatorium regulations came into being I was strongly impressed by one or two cases which seemed to show that there might be a tendency for persons with chronic or mild consumption to receive a more virulent form whilst in a sanatorium, and after a temporary improvement to burst out in rapid consumption, although previously likely to last for years.

The same sort of process may be observed in scarlet fever hospitals, where mild cases appear to contract a severer form after admission, and, after discharge, sometimes convey a severer form to their families. During the small-pox epidemic at the end of the South African war it was observed in quite a number of districts that after the local infectious disease hospitals had been closed there was an actual decrease in the number of notified cases of scarlet fever.

Again, I have had cases of infantile paralysis that have developed severe tuberculosis after a short stay in a convalescent hospital.

The prevalence of influenza is another cause. Lately I have had under my care two elderly men, both with large numbers of tubercle bacilli in their sputum. One of these had a severe influenzal pneumonic attack a year ago, from which he dated his illness. Both of these old men had numerous attacks of haemoptysis when young, thirty to forty years ago.—I am, etc.,

Wallasey, April 21th. F. WM. INMAN, M.B.

SIR,—As some confirmation of Dr. Williamson's statement in his letter (April 17th, 1920) on this subject, that a certain proportion of the cured cases from tuberculosis sanatoriums are cases in which a wrong diagnosis has been

made, it may be worth recording that I have cured cases confidently diagnosed as pulmonary tuberculosis by extracting septic teeth. Further, where the disease is truly tuberculous, septic teeth must be a powerful cause of secondary infection, and I have seen enough of sanatorium treatment to have formed the opinion that free extraction of septic teeth is a great benefit to consumptives. I suspect that thorough dental treatment on these lines would eliminate a large proportion of mistaken diagnoses and give the truly tuberculous settlers a much better chance.—I am, etc.,

London, W.1, April 20th. J. G. TURNER, F.R.C.S., L.D.S.

SAND-FLY FEVER IN MESOPOTAMIA.

SIR,—In the interesting paper by Dr. Willcox on heat hyperpyrexia, published in your issue of March 20th, 1920, he states: "In the great incidence of heat-stroke in July and August, 1917, sand-fly fever was entirely absent." I cannot understand this statement, for during this period a great epidemic of the disease was raging at Basra.

I am convinced from my own observations that some of the milder cases of hyperpyrexia, diagnosed "effects of heat B," were sand-fly fever, for during normal summer weather in Mesopotamia it was not very uncommon to find patients with temperatures of 105° F. and higher in sand-fly fever. I was in Baghdad when the heat wave commenced and there sand-flies caused me little inconvenience, but on returning to Basra a few days later I found the torment from these pests was so unbearable that few of us could sleep.

Sand-fly fever may have been absent at Baghdad, but it was certainly raging at Basra throughout the summer of 1917, including the heat-wave period. I quite agree with Dr. K. G. Hearne's theory (BRITISH MEDICAL JOURNAL, April 26th, 1919), endorsed by Dr. Willcox (BRITISH MEDICAL JOURNAL, March 20th, 1920), that sand-fly fever was entirely out of the question in the majority of cases which he describes as "hyperpyrexial heat-stroke."—I am, etc.,

Bridlington, April 20th. C. R. TAYLOR.

THE EARLY DIAGNOSIS OF SYPHILIS.

SIR,—The diagnosis of syphilis depends on the laboratory report, the clinical aspect of the case, and the period of incubation. In any case of untreated venereal sore the procedure I adopt is as follows: (1) The incubation period is noted, and a careful examination of the patient is made; (2) a warm saline dressing is applied to the sore, and no other dressing is used, unless, of course, the sore should be phagadaenic. Several dark-ground examinations are made, an interval of a few hours elapsing between each examination; if no *Sp. pallida* is found, an inguinal lymphatic gland (if present) is punctured, and some fluid removed and examined by dark-ground illumination (following Mr. C. W. Mills's procedure). Should no *Sp. pallida* be found, an injection of 0.45 gram of novarsenobenzol is given intravenously, and in seven days' time a blood test is made; if this is negative another test is done seven days after the first; if the result is again negative, the patient is told to have another injection of 0.45 gram novarsenobenzol in two weeks, and a blood test a week after the injection. A careful clinical examination is made at the time of each test.

In this way a diagnosis of syphilis is either eliminated or proved, and there is little time lost in treatment. To treat every sore as syphilitic is hardly in accordance with modern teaching. We have advanced tremendously in our methods of diagnosis of syphilis, but to condemn every man with a venereal sore to several years' treatment for syphilis is surely going backwards. The time lost in making a diagnosis is compensated by the loss of anxiety to the patient. I have seen several patients lately in whom no laboratory tests have been made, but have yet been started on a course of injections for syphilis. Three or four injections mask the clinical symptoms and upset the Wassermann reaction, and a definite diagnosis is difficult to make. In my last hundred cases I have had twelve undoubted cases of simple chancroid.—I am, etc.,

REGINALD JOHNSON, M.D.,
M.O. i/c V.D. Wards, Bermondsey Military Hospital, Lady well, S.E.

April 5th.

SIR,—In commenting on Dr. Bryan's letter published in your issue of March 20th Mr. Marshall and Major Ffrench give their opinion in support of Dr. E. Harrison that "chancroid is a rare condition, and nearly always has syphilis at the back of it." I think this statement should be qualified by adding: "in this country at the present time."

In France there has recently been quite an epidemic of simple chancre, and it would be easy to see as many as fifty or more any day of the week at St. Louis. I need hardly add that the French physicians insist on keeping these patients under observation, and that, while many cases turn out to be mixed, a large number remain simple throughout.

The advice given that "all cases of apparent chancroid should be treated at once for syphilis" will hardly meet with universal acceptance.—I am, etc.,

London, W., April 5th. M. G. HANNAY, F.R.C.P.E.

SIR,—Might I suggest that, while appreciating the interest of Drs. C. F. Marshall and E. G. Ffrench in my criticism of Dr. E. Harrison's previous letter, I think that a more careful perusal of my letter would have prevented them from making the entirely erroneous assumption that I am only prepared to accept a diagnosis of syphilis when *Sp. pallida* is shown by dark-ground illumination? They would then see that I merely wish to emphasize the risk of condemning a person suffering only from chancroid to a diagnosis of syphilis, with the prolonged course of treatment involved, on the strength of a faulty microscopic diagnosis.

As to the alleged rarity of chancroids pure and simple, Drs. Marshall and Ffrench's own figures seem to me to support my contention, as I consider that even 1 in 10 is a very considerable number. My own cases at the Middlesbrough clinic during the last year give a proportion of 1 in 4. These cases have been under observation not less than three months; the number (12) is, of course, one much too small on which to generalize, but the results confirm the impression I formed while serving in a military venereal hospital, which treated 4,000 to 5,000 venereal cases annually.

Referring to the remarks of Drs. Marshall and Ffrench as to "the false teaching which places laboratory diagnosis before clinical experience," might I quote the following extract from the report of the Medical Research Committee, 1918:

> That too much emphasis cannot be laid upon the importance of the detection of the spironema as affording the earliest means of diagnosis of syphilis, and this at a period when, clinically, it is not possible to arrive otherwise at a definite decision, and undoubtedly the ideal method of demonstrating the *Sp. pallida* is by the dark-ground condenser.

Allusion is made also to the disadvantages of staining methods, namely:

> Lack of affinity the *Sp. pallida* has for most staining reagents, the distortion caused by drying, and the absence of the characteristic movements.

From the report of Dr. E. Harrison in the BRITISH MEDICAL JOURNAL I am unable to decide which microscopical method he adopts; perhaps he will kindly enlighten us.—I am, etc.,

Middlesbrough, April 5th. A. BRYANS.

CIRCUMCISION—A BARBAROUS AND UNNECESSARY MUTILATION.

SIR,—While I agree with Mr. G. S. Thompson, in his communication of March 27th, that circumcision is often performed unnecessarily, it is an error to lay the blame entirely on the Jews for this practice. This piece of religious ritual originated with the Heliolithic culture which arose in the Nile valley thousands of years before the Jews became a nation, spread at first all over the East by trade routes, and after 800 B.C. was carried by the daring Phoenician mariners to all parts of the world, including Great Britain, the Pacific Islands, and even the American littoral.

Professor Elliot Smith has conclusively proved that this worship of the sun and the serpent was thus disseminated, together with the practices such as circumcision, mummification of the dead, massage, and piercing of the ears, to mention but a few.

I have no doubt that the Jewish ritual has influenced this country to a certain extent, and it might be wiser if we employed the method as practised by them, which is unattended by any danger from an anaesthetic.

Circumcision was performed in the neolithic age by the Egyptians, but probably became popular in Palestine after the Exodus, and perhaps received an additional stimulus after the Assyrian and Babylonian captivities, both of which regions were pervaded by the Heliolithic culture from the Nile; it would obviously appeal to the inhabitants of Palestine who were intensely phallic in their ideas. In Egypt the actual operation disappeared about the pyramid age (2600 B.C.), but persisted in adjacent localities from which the Phoenicians recruited their sailors, and so spread this custom.

The use of the chipped flint method is referred to in Exodus iv. 25, where Jahveh attempts to murder Moses, so the latter's wife "took a sharp flint and cut off the foreskin of her son" as a blood sacrifice to pacify the tribal deity.

Whatever opinion one may hold about the advisability of keeping women in bed after childbirth, the male members of our community should certainly thank the Jews for not adopting that other Heliolithic custom, the "couvade," which still exists in parts of China, where the husband is kept in bed to receive the congratulations of his friends, and attended by his wife.—I am, etc.,

Bexhill-on-Sea, April 2nd. G. LOWELL WEBB, M.D.

SIR,—It may interest some members to know that, like Mr. G. S. Thompson, F.R.C.S., I have not done a circumcision for upwards of twenty-five years. I separate the adhesions with a probe and partially dilate with Lister's sinus forceps; the dilatation is completed in three sittings twenty-four to forty-eight hours apart, each time withdrawing the prepuce repeatedly until it can easily be drawn forward, as I find sometimes that the constriction caused by the orifice is tight enough to cause swelling of the glans after the first dilatation. I have many times done this from 10 days up to 10 or 12 years; in one a man of about 28 (married, but no children), who could not spare time for operation, was successfully treated though the aperture was smaller than the meatus. He continued the stretching for three weeks with ivorine "glove stretchers," and became a father less than twelve months after. The foreskin also gradually withered, leaving part of the glans exposed.

I have often found in babies that as the organ grows out of proportion to the prepuce the glans is nearly completely exposed in a few years. There is next to no pain and generally no blood.—I am, etc.,

South Ealing, March 29th. HARDING H. TOMKINS, M.R.C.S.

ENCEPHALITIS LETHARGICA.

SIR,—May I venture to suggest that, although it may not fall within the province of the epidemiologists to demonstrate by laboratory methods a common virus for influenza and the forms of epidemic encephalomyelitis, nevertheless the proof of a certain degree of association over long periods of time between two recurrent sets of phenomena goes some way to establishing the propriety of assuming a common cause for them. Such an association, one is glad to observe, is now admitted to have been proved for influenza and encephalomyelitis.[1] But the remarkable paper by G. Re, in *La Riforma Medica* (October 4th, 1919), and the series of articles that have appeared in the same periodical since the beginning of this year, form a body of collective clinical and pathological opinion which supports in no small degree the views put forward first by Dr. Hamer and then by myself at the meeting of the Royal Society of Medicine in October, 1918, and later reinforced by the historical evidence[2] to which you have been good enough to allude in your editorial article this week. It was, however, Boström who, in 1757, plaintively observed, concerning the peculiar influenza at Upsala, "*Hic morbus non est novus*": Polydore Vergil, according to Cervantes, merely failed to tell us who was the first in the world to be troubled by a catarrh, while Brorström, who is, I believe, a descendant of the first named, in 1910 pretty clearly proved, in his *Akute Kinderlähmung und Influenza*, in respect of poliomyelitis, what some of us now believe in respect of the expanded Heine-Medin conception, or "epidemic encephalomyelitis." I am, etc.,

London, W.1, April 23rd. F. G. CROOKSHANK.

[1] BRITISH MEDICAL JOURNAL, April 24th, 1920, p. 579.
[2] *Proc. Roy. Soc. Med.*, vol. xii (Section of History of Medicine); and *Medical Press and Circular*, November 19th, 26th, and December 10th, 1919.

Obituary.

THE LATE PROFESSOR ALEXANDER FERGUSON.

THE death of Dr. Alexander Ferguson, professor of Pathology in the School of Medicine, Cairo, was recorded in our issue of March 20th, p. 422. We have since received the following personal appreciations:

Professor ROBERT MUIR, of Glasgow, writes:

When I was first associated with Professor Ferguson, in 1899, he was already an experienced pathologist. He had had an excellent training under the late Professor Coats, and this, combined with his natural aptitude for and enthusiasm in the work, had resulted in a wide and varied knowledge of his subject. He was also an accomplished bacteriologist, and for several years conducted the advanced course in bacteriology. Routine reporting on pathological material formed an important part of his duties at the Western Infirmary, and in this department I have known few men whose opinion I considered of so much weight. For he possessed, along with the scientific knowledge, that rare quality of balanced judgement, closely allied to clinical instinct, which enabled him to view in due proportion all the points of a case, and made his opinion much valued by physicians and surgeons. To the students of medicine in Glasgow University Ferguson was for several years a well known and attractive teacher. Possessed by a wide grasp of his subject and of its practical bearings, and gifted with a faculty of interesting exposition, he had a stimulating influence on his students, whilst his sympathetic regard for their welfare won their confidence and interest to an ever-increasing extent; and I have received abundant testimony that his teaching in Cairo was attended by an even greater success.

Dr. Ferguson was essentially a student and investigator, and it is quite in keeping with his character that, in proportion to the amount of research which he did, the number of his publications is not large. When in Glasgow he published various papers and notes on a number of subjects—for example, intestinal sand, congenital heart lesions, immunity, etc.—but his chief work was concerned with the pathology of small-pox, to which he devoted much labour over a long period. His chief results, dealing with the blood changes and tissue lesions, were incorporated in a thesis for which he received the degree of M.D. in 1905, and was awarded a gold medal. The part dealing with the blood (which was the first detailed account in this country), and that dealing with the skin, appeared in the *Journal of Pathology* in 1903-4, and added to his reputation as an accomplished pathologist. Although busy with teaching and hospital work at Cairo he was constantly carrying on investigation, and I always looked forward to the opportunity of discussing the subjects concerned, and learning his views. Reference to his investigations there has been made by another writer. I may merely mention his important papers on splenomegaly, on "parasitic granuloma," and on bilharziosis. All these are of an authoritative order, and constitute real additions to our knowledge. In them, as in all his work, we find the qualities of careful and accurate observation, and fine judgement and criticism, whilst his writing possessed marked literary charm. His removal by death when at the zenith of his powers, means a great misfortune to the cause of medical education and pathological science in Egypt. Few are privileged to win the affection and esteem of their fellows to such a degree as Ferguson did. He was a man of straightforward simplicity of character and of unusual charm; modest, gentle, and courteous, he was at the same time immovable in resolve when he considered a question of right involved, and while he applied severe standards to his own conduct, he was always indulgent where the failings of others were concerned. He had a keen interest in, and great enjoyment of life in its many aspects, a rich fund of anecdote, and a marked trait of quaint humour; all these enhanced

the pleasure of intercourse with him. But above all, it was the character of his life and his bigness of heart which endeared him to his compeers. His memory will always be cherished by those who had the advantage of his friendship.

Professor W. H. WILSON, of Cairo, writes:

The unlooked-for death of Alexander Ferguson at the comparatively early age of 49 is a loss to the Cairo School of Medicine which it will be difficult to repair; it takes place at a time of reconstruction and evolution when a man of his knowledge, geniality, and experience could ill be spared.

During the past nine months, when the measures for the reorganization of the school have been under discussion and illness made his attendance at the meetings of the School Council impossible, we have constantly felt how much might have been gained from his insight and strong common sense. By his friends and colleagues his loss is doubly deplored; none could fail to be attracted by the modesty, kindliness, and humour which characterized his personality, or fail to admire the technical ability and wide knowledge of morbid anatomy, the subject in which he was really eminent, which he acquired in his close association with Coats and Muir, with both of whom he formerly worked for some years as assistant. In 1906 W. St.C. Symmers left Cairo for Belfast, and Ferguson was selected from a considerable number of candidates for the Professorship of Pathology at the School of Medicine, Kasr-el-Aini. The appointment was determined by the number and varied nature of Ferguson's published papers and the brilliant testimonials to his capacity as a teacher which he received from those who knew him. In addition to his teaching work he acted as pathologist to the hospital. He was constantly engaged in research, but the large amount of routine work attached to his post, combined with ill health, which his colleagues could not fail to notice but which he himself persistently refused to acknowledge or give way to, accounts for the fact that little of his work was published between the years 1907 and 1915, when his military duties gave him no further chance of scientific work.

Three papers may be referred to illustrating the type of scientific work to which he gave his time: "An account of a form of splenomegaly with hepatic cirrhosis endemic in Egypt," in collaboration with H. B. Day, M.D.Lond., *Annals of Tropical Medicine and Parasitology*, vol. iii, No. 3, November, 1909; "Parasitic granuloma," in collaboration with Owen Richards, F.R.C.S., M.Ch.Oxon., Ibid., vol. iv, No. 2, July, 1910; "Lesions of bilharzial disease," *Glasgow Medical Journal*, January, 1913.

Ferguson recorded in the second of the above papers the discovery of the *Leishmania tropica* in the peculiar circumscribed epidermic papillomata of the disease, an observation of some significance in relation to the condition described in the first paper and the possible occurrence of kala-azar in this country. The third of these papers is a very brief and partial account of the mass of investigation Ferguson carried out on this disease.

It was to the subject of bilharziosis that he devoted most of the time he could spare for research. The unique collection of specimens prepared by him from the rich *post-mortem* material now in the pathological museum of the school is evidence of the interest he took in a disease in regard to the morbid anatomy of which he was the recognized authority. It is a matter of profound regret that much of his work must remain unrecorded; fortunately he was able to contribute the pathological section of the chapter on bilharziosis in Byam's *System of Tropical Medicine* (in the press).

Many of Ferguson's observations may also be found in F. C. Madden's *Surgical Diseases of Egypt*. His opinion, which I cannot find recorded, but which I recollect his expressing in a paper read before the Cairo Scientific Society some years ago, that the travelling of the ova through the tissues to the mucous surfaces was due to the excretion by the myracidium of a digestive enzyme, which softened the tissues in the path of the ovum, is of considerable interest and is perhaps supported by the eosinophil character of the surrounding leucocyte invasion.

Probably the most difficult task he carried out was the compilation of the admirable descriptive catalogue of the pathological collection attached to his department.

In the autumn of 1915 Ferguson received a commission with the rank of major in the R.A.M.C. This rank he retained, although for the greater part of the time carrying out the duties of a consultant, until the end of his service in 1919. The first duty he took over was that of Director of the Central Laboratory for the Alexandria District at No. 21 General Hospital. His success in co-ordinating the work of the various laboratories in that district led to his being given the task of directing the work of the bacteriological and other laboratories attached to all hospital units with the Egyptian Expeditionary Force. This took him to Kantara and eventually to Palestine and Syria; there is little doubt that the hardships and exposure to which he was inevitably subjected aggravated a latent weakness of the lungs and was responsible for the condition which eventually carried him off. In November, 1918, he was appointed to direct the Pathological Section of the Commission to inquire into the incidence of Pellagra among the Turkish prisoners of war in Egypt. The work of this Commission was crowded into a short two months, and the share of it which fell to Ferguson was far too strenuous for his failing health. For his services he received the Order of the O.B.E.

Late in May of 1919 he went on leave to England. The state of his health, overfatigued by the voyage home, gave great anxiety to his friends on his arrival in Scotland. During the next six months considerable improvement took place, and in December he thought himself fit to return to his duties at the Medical School in Cairo. A chill taken on board ship during the journey gravely aggravated his condition, and he arrived in Cairo suffering from severe bronchial trouble. After two months' illness he passed away quite suddenly while reading in bed at 8 p.m. on February 22nd, the cause of death being heart failure. No one could wish for a more peaceful end.

He leaves a widow and two sons of 6 and 7 years of age, at present at school at Dollar, N.B. His family have the sympathy of all his friends. The funeral, which took place next day, was attended by a great part of the British colony in Cairo and many of his old students.

The Services.

DEATHS IN THE SERVICES.

MAJOR NORMAN SEPTIMUS WELLS, I.M.S., died in the Middlesex Hospital on April 20th, aged 43. He was born on December 22nd, 1876, educated at Edinburgh, where he graduated M.B. and B.Ch. in 1900, and entered the I.M.S. on January 29th, 1901, attaining the rank of major on July 29th, 1912. Before the war he was in civil employ in the United Provinces, but rejoined the army for military duty, and served throughout the war, being mentioned in dispatches in the *London Gazette* of July 13th, 1916, and receiving the O.B.E. on June 3rd, 1919.

Universities and Colleges.

UNIVERSITY OF GLASGOW.

AT the graduation ceremony on April 20th the following degrees were conferred:

M.D.—*Daisy A. M. Clark (Mrs. Gale).
D.Sc.—Dr. John W. McNee, Dr. John B. Orr.
M.B., CH.B.—†J. W. S. Blacklock, *A. D. Brown, *P. A. Mackay, *R. G. Howat, A. M. Beaton, A. K. Begg, R. R. S. Bowker, Annie B. Cameron, J. P. Chisholm, G. M. Cooper, W. N. Duguid, R. Fletcher, T. Fletcher, R. A. Forsyth, T. D. Hunter, G. Jamieson, Chung U. Lee, B. Levine, A. M'C. Macintosh, W. M'Kendrick, J. M'K. Maxton, J. S. Meighan, Marjorie Mitchell, T. F. Noble, P. C. Rankin, R. S. Reid, J. Sachs, Marguerite L. Sclanders, Cecilia Siskin, T. S. Stirling, A. Strang, H. A. Summers, J. L. Turpie, J. D. Williamson.

* With commendation. † With honours.

The Bellahouston Gold Medal for eminent merit in thesis for M.D. has been awarded to Dr. Harry S. Hutchison, and Dr. R. T. Leiper has been awarded the Straits Settlements Gold Medal in tropical medicine.

The Asher Asher Gold Medal in laryngology and rhinology has been conferred upon Mr. James N. Tennent.

IN the notice of the annual report of the Medical Department of the Local Government Board for 1918–1919, published on January 31st, 1920, p. 164, attention was directed to the disquieting remarks made by Dr. A. W. J. Macfadden, C.B., in the section dealing with the work of inspectors of food. This part of the report is now published separately by H.M. Stationery Office, and can be obtained, price 3d., through any bookseller. In it the insanitary condition of many private slaughterhouses is described, the inadequacy of existing arrangements for their inspection pointed out, and important recommendations for their improvement made.

DR. THOMAS LEWIS has in the press with Messrs. Shaw and Sons a volume on *The Mechanism and Graphic Registration of the Heart Beat*. It is an enlarged and revised edition of his earlier volume entitled *The Mechanism of the Heart Beat*.

Medical News.

ON the evening of presentation day at the University of London (Wednesday, May 19th) a graduation dinner will be held at the Guildhall; it will be attended by the Lord Mayor and Sheriffs in state, and the President of the Board of Education intends to be present. The graduation ceremony will take place in the afternoon at the Albert Hall. This is, we believe, the first occasion on which a graduation dinner has been held.

SIR JAMES CRICHTON-BROWNE, M.D., F.R.S., will deliver the first Maudsley memorial lecture before the Medico-Psychological Association of Great Britain and Ireland. The lecture will be given on May 20th at 3.30 p.m. at the house of the Royal Society of Medicine, 1, Wimpole Street, W.

ON Wednesday next, May 5th, at 5 p.m., Dr. W. Blair Bell, gynaecological surgeon to the Royal Infirmary, Liverpool, will deliver a lecture on the surgical treatment of prolapse of the uterus and vagina at the house of the Royal Society of Medicine, 1, Wimpole Street, W.1. All members of the profession are invited to attend.

A MEETING of the Medico-Legal Society will be held to-day (Friday, April 30th) at 8.30 p.m., at 11, Chandos Street, W.1, when a paper will be read by Dr. Mackenzie Wallis, lecturer in chemical pathology, St. Bartholomew's Hospital, on the purity of ether and chloroform in its relation to anaesthesia. Dr. Bernard H. Spilsbury will exhibit specimens.

IT is proposed to commemorate the opening of the 48th General Hospital, Salonica, by a dinner in London on June 24th. Officers who have been connected with the unit and wish to take part are requested to communicate with Mr. B. Holroyd Slater, F.R.C.S., St. Luke's Hospital, Bradford.

A THIRD post-graduate course of instruction in the diagnosis and treatment of venereal disease is being arranged by Mr. K. M. Walker at St. Bartholomew's Hospital Clinic, Golden Lane, E.C., established by the Corporation of London. The course will be held on Thursday afternoons, at 5.30 p.m., commencing May 13th. In addition to work in the out-patient department the beds attached to the clinic are available for the reception and study of suitable cases. There are still a certain number of vacancies. Any medical practitioner wishing to attend is invited to send his name to the Secretary, National Council for Combating Venereal Diseases, 81, Avenue Chambers, Vernon Place, Southampton Row, W.C.1. (Telephone: Museum 2432.)

THE Lord Mayor will preside at a meeting to be held at the Mansion House on May 11th at 3 p.m. for the purpose of bringing before the Lord Mayors and Mayors of the country the objects and scope of the People's League of Health.

RULES (No. 560, price 1d.) have been published by the Minister of Health for the procedure to be adopted when a local authority has refused permission to demolish a house, and the owner wishes to appeal to the tribunal established under Section 5 (2) of the Housing (Additional Powers) Act, 1919.

IT is proposed to hold a reunion dinner for officers who were attached to No. 2 British General Hospital, Mesopotamia. Officers are requested to communicate without delay with Dr. Urban Marks, 1, Trinity Place, Swansea.

SIR ARTHUR NEWSHOLME, who has returned from America, has in the press a volume of American addresses on Public Health and Insurance, which will be published by the Johns Hopkins University Press.

AT a special general meeting of the Röntgen Society to be held at 11, Chandos Street, W.1, on May 4th, at 8.15 p.m., a proposal will be submitted to raise the annual subscription of ordinary members from £1 1s. to £2 2s.

WE learn from the *Journal of the American Medical Association* that under the new internal revenue regulation relating to the supply of alcoholic liquor to doctors in the United States, it is necessary for those who desire to purchase or prescribe such liquors for their patients to procure a permit. The permit allows the prescription of liquor for medicinal purposes only. A doctor is also allowed to purchase not more than six quarts of alcoholic liquor during any calendar year for professional purposes only.

MR. H. E. POWELL, for some years sublibrarian, has been appointed librarian to the Royal Society of Medicine, in succession to Mr. C. R. Hewitt, who, as was recently announced, has been appointed librarian to the League of Red Cross Societies. Mr. Powell first joined the staff of the library as a pupil about eighteen years ago, and has earned his promotion by making himself thoroughly acquainted with the contents and purpose of the library and placing his knowledge at the disposal of readers.

DR. RUSSELL WELLS, Vice-Chancellor of London University, presided over the medical missions meeting held on April 21st in connexion with the 219th anniversary of the Society for the Propagation of the Gospel. He deprecated the idea that medical missions meant the dispensing of so much medical skill on the understanding that the recipients listened to so much teaching. It was the duty of Christians to distribute the great gifts which had come to them, not for the purpose of securing direct conversion, but as the natural overflow of a grateful heart; those who received the benefit of medical missions would regard a religion that prompted such altruism as something worth inquiring into. If asked to choose between a medical missionary one who had an indifferent knowledge of medicine but had the gift of preaching, or one who knew medicine well but had no such preaching gift, he would unhesitatingly prefer the latter. It was stated at the meeting that more medical men were badly needed in the fields covered by the operations of the society, especially at Singapore and Malacca. Medical men attached to the society are taking part in medical education at Peking and Tsi Nan Fu. The income of the medical missions department of the society last year was £15,178.

A LETTER, signed by Lord Willoughby de Broke, Sir Bryan Donkin, Sir W. Arbuthnot Lane, Sir James Crichton-Browne, and Dr. H. Wansey Bayly, has been addressed by the Society for the Prevention of Venereal Disease to county councils, county boroughs and municipal boroughs, and to medical officers of health throughout Great Britain. In this communication allusion is made to the serious effect of venereal disease on the national health and to the misery and suffering of which it is the cause; at the same time it is declared that "the clearest and most definite evidence exists to show that venereal diseases can be readily prevented by the adoption of immediate disinfection after exposure to infection." The society states that its members favour all measures which, by promoting a higher standard of morality, tend to prevent the spread of venereal infections, but realize that there will always remain a large class who will continue to practise promiscuous intercourse. The policy of the society is stated to be purely educative; the authorities are not asked to provide "packets" or anything of that kind, but to issue advice in the same way as about tuberculosis and influenza, pointing out how persons should protect themselves against venereal disease.

IN consequence of the general increase in masters' salaries and in the cost of living, as well as in order to provide alterations in masters' superannuation grants on the lines of the Superannuation Act of 1918, the Council of Epsom College have been compelled to increase the school fees as from September next for all boys, whether entering the school for the first time or at present there. The fees have been increased for the sons of medical men from 70 guineas to 100 guineas; for lay boys from 80 guineas to 120 guineas, and for day boys from 25 guineas to £40. The Council felt that it had no alternative but to make these increases, as the loss on the working of the school for the past year amounted to £3,779 15s. 10d. The charitable contributions in aid of the foundation cannot of course be expended in defraying any of the expenses of the school beyond paying for the education of foundationers.

THE legislature of South Carolina has passed a bill framed by the State Medical Society requiring all "chiropractors, osteopaths, and other healers" to submit to examination before the State board of medical examiners.

THE Surgeon-General of the United States Army has asked for a grant for the publication of the medical and surgical history of the war. Much of the material for this history, *The Journal of the American Medical Association* states, is already collected and its publication depends on the action of Congress. The first portion of an unofficial history of the Canadian Army Medical Corps appeared at the end of 1918, and the German history, in nine volumes, is promised this year. Our contemporary emphasizes the importance of prompt publication of records which have so great scientific and historical value, and trusts that there will be no repetition of the twenty years' delay which followed the War of the Rebellion. Considerable progress has already been made with the British official medical history of the war, of which Major-General Sir W. G. Macpherson is Editor-in-Chief: the offices are at Stanhope House, Kean Street, Kingsway.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Mediscera, Westrand, London;* telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin:* telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh;* telephone, 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

P. Q. R. has hitherto deducted two-thirds of the rent of his house from his gross receipts for the purpose of his income tax return. What will he be able to deduct if he buys the house?

*** Two-thirds of the amount on which he pays income tax *plus* two-thirds of general expenditure on repairs, redecorations, etc. The fact that he may be forced to purchase the house for a larger sum than might be considered reasonable in less abnormal circumstances does not affect the question, but the realization of investments for that purpose of course will reduce his private income and *pro tanto* the tax payable thereon.

O. R. J. L. inquires as to the possibility of claiming repayment in respect of the right of being charged at the "service" rate of tax.

*** From the figures supplied it would seem that the two sums £19 0s. 3d. *plus* £2 2s. 4d., or £21 2s. 7d., together make up the correct liability for the financial year ending April 5th, 1919. Assuming that the £13 5s. 6d. represents the tax paid for the period from September 12th, 1917, to April 5th, 1918, and that our correspondent had no other source of income during the *year* ending at the latter date, she would apparently be entitled to repayment of rather more than £10. The claim can be put forward on Form No. 40, to be obtained from the office of the local inspector of taxes. We may perhaps add that in allocating the various payments of tax, O. R. J. L. has been misled by the due "date of payment"; all income tax assessments are made in respect of financial years ending on April 5th.

ANAESTHESIA IN EPILEPTICS.

DR. G. W. HASSALL (Assistant Anaesthetist to the General Hospital, Birmingham) writes: A few years ago I had a case in which epilepsy made itself manifest during anaesthesia. The operation was for acute appendicitis with complications in a girl about 7 years old and lasted about half-an-hour. The child was in deep chloroform anaesthesia and the peritoneum had just been opened when clonic spasms occurred chiefly in the muscles of the extremities. They lasted a few seconds. The breathing was embarrassed and some duskiness resulted, but the operator was able to proceed. When the appendix was found another attack occurred. I then changed to open ether, but before ether anaesthesia was fully established there was another attack. After this the child was kept deeply under ether and everything went smoothly. The child had a history of epilepsy. I have had a few other epileptics through my hands, but in them nothing peculiar happened although ether was given part of the time.

LETTERS, NOTES, ETC.

A WARNING.

SIR ALFRED KEOGH, G.C.B. (Rector Imperial College of Science, South Kensington) writes: It has come to my knowledge that at various times and places a person falsely representing herself to be a near relation of mine, has imposed upon members of the medical profession and others. I shall be glad if you will allow me to call the attention of the profession to this imposition, and I shall be obliged if reference be made to me in future attempts.

BLIND MASSEURS.

SIR ARTHUR PEARSON, Bt., G.B.E., Chairman, Blinded Soldiers' and Sailors' Care Committee, writes: Will you allow me to draw the attention of your readers to the fact that at the recent examinations of the Incorporated Society of Trained Masseurs, which are known throughout the world for their completeness, Cpl. Herbert Vickers, a blinded soldier of St. Dunstan's, passed first in all subjects. That this was no mean accomplishment may be judged by the fact that there were nearly three hundred entrants for this examination. Of these less than fifty per cent. passed, while of the sixteen St. Dunstan's entrants, of whom Cpl. Vickers was one, fifteen passed, nine being amongst the first twenty-six on the Pass List, and the one failure was accounted for by the fact that the unsuccessful candidate had for some weeks before the examination suffered severely from neuralgia, which had almost entirely robbed him of sleep.

T.F. AND S.R.

EX-T.F. MAJOR writes: "Optimist" (April 24th, p. 590) appears in doubt as to how he can "get out" of the T.F. or S.R. I have recently left the T.F. by writing to the Secretary, War Office, asking that I be permitted to resign my commission. The reply was: ". . . I am to add that resignations can now be accepted, and a notification resigning your commission will appear in the *London Gazette* at an early date." I write this in case the information should be of use to any of your correspondents. I may add that after serving as Volunteer or Territorial from 1907 until now I am so thoroughly disgusted with the inconsiderate treatment meted out to me by the authorities that I shall make no attempt to assist in the reconstruction of the T.F. It appears to me high time that medical and other professional men should make it abundantly clear to the authorities that reasonable treatment must be guaranteed before busy men will give their spare time to covering up the deficiencies of our system of national defence.

SUDDEN DEATH AT ATTEMPTED ABORTION.

DR. A. C. GEMMELL (Brighton) writes: In a recent criminal trial the question was raised whether attempted abortion could cause sudden death. I came across to-day in an old volume of the BRITISH MEDICAL JOURNAL a reference to this subject. It occurs in the Epitome of Current Medical Literature, BRITISH MEDICAL JOURNAL, June 14th, 1913, p. 94. From this it would appear that such sudden deaths do occur.

ANTISCORBUTIC LEMON JUICE TABLETS.

THE work at the Lister Institute having shown the futility of the issue of ordinary lime juice as previously supplied to the navy as an antiscorbutic, Surgeon Captain P. W. Bassett-Smith, C.B., C.M.G., carried out experiments at the Royal Naval Medical School, Greenwich, in order to devise a method of preserving lime juice in a convenient and active form. In the method of preparation eventually devised heat is not used, and an efficient portable and palatable compound, rich in antiscorbutic vitamine, is obtained; when tested on guinea-pigs it was found to retain its potency at ordinary temperatures. The method used is as follows: "The juice is roughly filtered through muslin, and then through filter-paper under reduced pressure. The filtered juice is evaporated *in vacuo* over sulphuric acid at ordinary temperature (15° C.). The residue of non-crystallizable syrup is worked up into as stiff a paste as possible with a mixture of anhydrous lactose 97 per cent., and gum tragacanth 3 per cent. The paste is cut into sections, each containing the juice of half a lemon. These are rolled, faced with the mixture, and pressed to assume the lozenge form."

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 39, 40, 44, 45, 46, and 47 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 41, 42, and 43.

THE following appointments of certifying factory surgeons are vacant: Tarbert (Argyll), Yatton (Somerset).

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Six lines and under	0	7	6
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NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.